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SOME MANUAL TRAINING IDEAS.

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IT seems unnecessary at this late day to offer any new arguments for Manual Training to the readers of EDUCATION, but in my recent efforts to spread manual training, certain reasons why it should be more general in our schools have forced themselves upon me, and as I do not find all of these advanced among the common arguments bearing upon this subject, I assume the risk of laying them before the teachers, sure that those to whom they are familiar will receive no harm.

Fitting the child to be a definite, efficient force in society is the end of education by the State. This involves the training of all his powers, after the Froebelian notion. It also involves the cultivation of a sympathetic comprehension of the needs and conditions of society. This point has been clearly made by Dr. Harris in the report of the Committee of Fifteen.

Such appreciation does not come through the mere receiving of information; what we ordinarily call knowledge, especially knowledge about things as distinguished from knowledge of things, does not necessarily fit the possessor for successful or useful living. Such appreciation comes only through experience, by which we mean living a life similar in conditions to that for which the preparation is sought. Hence a school should be a microcosm and the child in school should lead a life which is a miniature of the larger life in the world. I want to make this point clear and emphatic.

The superiority of the kindergarten over the ordinary primary

school does not consist in the character of the tools used, the gifts, the occupations, the circle upon the floor, but in the fact that it is an institution of which the child is an integral part. He is, while in the kindergarten, living a life to him as real as the life which his father leads, or you, or I. He is a member of a community in which all have a part and which goes through seriously the regular businesses, amusements and duties of a life which is but a miniature of the life of the great world, and by this actual living he is fitted to be a potent factor in society. The child is entitled to a real daily life, and he whose life is spent in abstract contemplation of the past or in abstract study of arts that men use in real life without direct contact with such life, is robbed of his right, while society is robbed of a trained citizen. This real and vital connection between the processes of education and the civilization into which the child is growing is the aim of the new education.

This thought that preparation is one thing and realization another did not belong solely to the old education. It was inwrought into the life of the past. It belonged especially to theology, from which it spread to other departments of life.

> "This world is but a fleeting show for man's illusion given
> Its smiles of joy, its tears of woe,
> Deceitful shine, deceitful flow,
> There's nothing true but Heaven."

is its key-note. All is a preparation for the future to such an extent that nothing is real. In some mysterious way the soul is supposed to be fitted for future life, not by the abundance of present life, but by its negation. It is easy to trace the connection between this theology and the old education of the three R's.

All study was a study about things through words. The other arts by which man expresses himself did not enter into the general education; they were reserved for real life. Now there are many arts which man uses to express himself, and for many people these arts are the natural and proper expression of the best that is in them and stand for higher ideals and for more effective service to mankind than words could possibly represent. The painter's brush and palette, the sculptor's chisel, the carpenter's hammer and the seamstress's needle often stand for more true service to civilization, nobler sacrifices for the common good, higher ideals, than many a sermon, poem and philosophical

treatise. Indeed, words are useful but as they lead to deeds. They are at best intermediary, and I am not sure but I envy those men who have been able to put their lofty conceptions into solid stone. I deem this point worth repetition. The man who puts his dream, his inspiration, his ideals into a painting, a statue, a temple serves man as effectually and in as high and idealistic a sense, as he who puts his into the form of a poem or proverb. Nay more, the man who puts his ideal into solid, useful form, though not æsthetic, he who makes a tool for man to labor with, a machine to lessen human toil, an engine to annihilate space and bring two worlds together, a garment to clothe the naked, a bucket to draw water from the well for the thirsty, is as truly serving civilization and may be as genuine an idealist as the author of an epic or the builder of a church; hence, education, if it is to fit the child to have sympathy with the present civilization, to lead him to comprehend the motives that have caused it, to fill him with desires for service to mankind, to give him ability to fit himself to become an effective force in civilization, cannot ignore these other arts.

The greatest force in the civilization of the present generation has been manifested through the so-called mechanical arts. This is the same force that has manifested itself at different times in history, in the verses of Homer, in the prophecies of Isaiah, in the Pyramids of Egypt, in the glories of the Acropolis, in the "Divina Comedia," in "King Lear," in "Paradise Lost," and in "In Memoriam." It is the divine spirit speaking through the works of man; in other words, it is inspiration.

> "The old order changeth, yielding place to new
> And God fulfills himself in many ways
> Lest one good custom should corrupt the world."

Change does not mean decay. We hear lamentations continually because of the decline of poetry, we hear the complaint that pure literature is no longer produced. What of it? Does it mean that there are no longer lofty ideals, that men do not have high thoughts, dream noble dreams? By no means. These Jeremiads simply show a failure to comprehend the manifold workings of the divine spirit. Men say that this is a materialistic age and denounce it. Such denunciation is the cheap and silly talk of superficial critics who like to make high sounding generalizations. It is true that there is much of luxury in this age;

that has been true of every age. It is true that men seek material goods; men always have, but it is not true that matter rules. It is true that men have higher ideals than ever before, that there is more of the spirit of service in the world to-day than in the days of the past.

The wonderful progress in the realms of science and of technical construction has simply made it possible for higher ideals to become common property. The increased material comfort of the average home renders it possible for the occupants of that home to devote more time and energy to higher things,— to art, to literature, if you will, to religion and philanthropy than was ever possible before. The present age stands not for the triumph of matter over spirit, but for the triumph of spirit over matter. It appears to be a materialistic age because men are using matter for spiritual ends. So when we contend that the education of children should not consist in the mere conning of words, but should seek to put them into sympathetic relation with all good forces and all good things, we are not serving Mammon, or bowing down before a materialistic altar, but are helping along the progress of the world by teaching that larger conception of the utility of all things good, and by showing the child how to use every force for service.

It is time that thoughtful people protested against the assumption on the part of certain classes that their work is essentially higher than that of others. All work is high that is not selfish or injurious to society. The exalted character of a man's work is to be measured by the degree of its usefulness to mankind. I believe in the universality of service.

First, manual training in public schools is necessary to a thorough and sympathetic understanding of our civilization. This cannot be obtained by mere reading about those material triumphs which are the distinguishing mark of the age. This is a generally accepted pedagogic principle, which does not need to be enlarged upon here. All modern, elementary teaching which can in any sense be termed scientific employs it. We teach language by its use. The child who tries to use language well to express his best thought is better able to comprehend the successes of others in literature. So the boy who has hammered and chiseled and sawed to produce some thing of beauty or some object of utility out of unyielding material, is in a position to understand

mechanical triumphs. The boy who has conceived, drawn and constructed a machine understands the value of machinery in this, its age.

Second. Manual training in public schools has a most marked tendency toward the breaking down of lines of class and the creation of true democracy. The majority of men are engaged in some form of manual labor. Sometimes this labor requires great mental power; sometimes not. The boy who has worked at the bench, his elbow touching that of another boy of totally different home environment and training, is more likely to appreciate the value of honest effort in any line and to understand that service is not limited to any particular class.

The great questions that trouble us to-day and seem to be growing in importance and difficulty, the questions of the difference between so-called labor and capital, between those who labor with their hands and those who perform other kinds of labor will not be solved by legislation. They are moral questions and will not be satisfied until men sympathize with men regardless of class and recognize the good in one another, until the misunderstandings which are at the bottom of nearly all quarrels disappear before the clear dawn of sympathy, and I believe that the general introduction of manual training into the people's schools will have a strong tendency to produce this sympathy.

Manual training gives the child a chance to know himself. The more numerous and various the ways by which the child tests himself during the period of his elementary education, the more likely he is to know in which field he can best serve his generation. The choice of an occupation, a definite means for common service too frequently rests upon chance. The average boy or girl, looking for work, takes what comes first and bids fair to offer a living, the tendency being, among thinking people where election is possible, to choose occupations not likely to interfere with white hands. The cases of round pegs in square holes are innumerable.

Many and many a boy with vigorous frame, accurate eye, and good muscles who might accomplish great things if he had been trained to put his thoughts into material form, wears out his life selling ribbons by the yard or making trial balances (drudgery of drudgeries) simply because he has a fancy for clean occupations that let him wear his best clothes every day, and has never felt that

ennobling enthusiasm for the making of things, the actual production of articles which a course of manual training would have given him; hence the introduction of manual training into public schools enables a vastly larger number of children to find themselves and choose for themselves the right places for life-work.

This alone will effect immense economies and very greatly hasten the progress of civilization. If every educated boy and girl who labors,— that is, who contributes to the general good— were to work along the line of his or her own interest and ability, think what a vast saving of energy would be effected, for the greatest waste in the world comes not from idleness, but from misdirected energy, and the failures in life are very largely due to the fact that people have not found their proper places.

We need at the present time the re-union of mind and muscle, not trained hands, but trained minds with hands subject to them. The trained hand is nothing but a machine, and it is that, that the skillful, average journeyman mechanic has. Among no class of people are thoroughly trained minds needed more than among those who represent material development, the so-called laboring classes (as if, forsooth, we did not all labor). The great problems of the day affect directly these classes and must be settled by them.

There is no better field in which a trained mind can serve humanity than in the ranks of skilled labor. The opportunity for leadership of the highest sort, for the exercise of those qualities which constitute statemanship has been transferred from the halls of legislation to the halls of the labor union. If mechanics are to be merely trained muscles, mechanical automata, we may well dread to face the future. Trained leaders, wise and philanthropic, must be raised. It is a field for the noblest ambition.

If Mr. Debs or Mr. Powderly, or any of the other so-called labor leaders had been wise men, unselfish men, good men, they could have done more to advance the cause of civilization than any man who has been in public life during the last twenty-five years. The labor union has taken the place of the town meeting. Politics have become machinery where free discussion exists no longer. The school for citizens has been transferred, for the majority at least, to those halls where men with common interests, vital to themselves, meet and discuss; hence our schools must educate boys and girls in sympathy with human toil and bring trained minds to bear upon these great problems from the laborer's side.

If by courses of manual training, taste can be directed to this department of human effort and large numbers of our best trained young citizens can be led into these fields of labor for life, the leavening force will be tremendous and the freshly imported foreigner, trained under other systems, will cease to be the ruling force in American social struggles.

There is another purely educational effect of manual training which must be treated. The highest activity of the mind is creation, the conceiving a new thing and carefully working out in detail the conception, and then putting it into actual realization. The man who conceives, designs and makes things is performing the highest function of the mind. This is what is done in a proper course of manual training. The imagination is stimulated, expression is encouraged and then production follows and completes the educational circle. The boy who has thought out a tool, or a machine, or even a definite piece of carpentry, has portrayed his conception in a drawing upon paper, and then has made it, has really accomplished more and has gotten more power than he could have obtained through any amount of learning about things.

I called it an educational circle. Perhaps spiral would be better, because it is never complete. A conception originates in the imagination, it is followed out into design and the first round is completed when the solid product stands before its creator finished, but this product and the labor put forth in its creation stimulate the imagination anew and arouse new conceptions leading to new designs and new productions. Creation is born from creation and this is just as true with these material things as in the realms of pure intellect, and for the average boy and girl it is much more real, and hence more profoundly true. Making things, not after a design first made by some one else, but as they have grown out of the soul of the maker, is creation, and the world advances by the creations of men, not by their imitations, whether those creations be ideas embodied in words, ideals embodied in acts or conceptions embodied in things.

The advantage of manual training work for young people is its reality. It is so tangible. The boy has ideas, but words for their expression escape him; he is frequently embarrassed and unable to express himself in acts, but give him tools and things to work on and he possesses himself at once, and through the exercise of

this highest function gains that tremendous power that comes in no other way. It gives him new interest. We all know how difficult it is to keep boys and girls in school at a certain age. The enthusiasm of discovery which belongs to infancy and has carried them through the primary years is gone. For the period of adolescence, with its new hopes and ambitions making over the nature of the youth, the ordinary school exercises offer little, hence it is the period of truancy and bad associations when the boy is a puzzle and we wonder if he will ever come out right. Acquisition is not so active a mental trait then as a little earlier in life. Creation is becoming dominant. The boy is intensely practical, his ideals must take a definite, clear, tangible form or they are less than moonshine. At this age, the box of tools at home, the manual training shop at school, supply the needed stimulus and interest to the great relief of anxious parent and teacher. We were put into this material world for something besides its crucifixion, animal nature was given its prominence for something other than its crucifixion. The child like any other animal must investigate his material surroundings and be able to master them. This is the first mastery in the young life, and if properly directed, becomes the key to all the greater and wiser and wider masteries of the future. Manual training aids and encourages this mastery of mind over matter. Anyone who has felt the thrill when the object of his dream, even if it be a humble box, stands before him complete, perfect, visible, tangible, will know the power of manual training to create and hold interest.

The readers of EDUCATION will be patient with me if I enlarge upon what I think such a school should be, because it seems to be still, with very many people, in the air. Notions regarding it are by no means clear, and I think that most of the schools now serving this purpose are still in the dark as to their aims and methods, and that some of them at least are working upon a wrong basis. I am aware that this statement is not modest, and that others may entertain a similar opinion with regard to my ideas, but at least a brief discussion of the question can do no harm. A manual training high school, then, is not a trade school. This is accepted as a truism by all manual training advocates, and yet the trade idea is, I think, predominant in most of our manual training schools, though it is not admitted in words; I mean, the work is one-sided and technical, tending to trades rather than to the culture of the students.

Manual training is allowed to discount the old style of mental culture, consequently, some of the broadening, civilizing influences which I have claimed for manual training are not secured. Culture in the true and broad sense is the one justifiable aim of public schools. I mean by culture, growth into civilization, the becoming organically, usefully and intelligently a part of society.

Now the mere making of things fails of its highest utility unless the intellect and soul of the maker are brought clearly and consciously into play; hence the purely mechanical features of the mechanic arts course should not be predominant nor should they absorb time to the exclusion of what are commonly known as culture studies. The diploma of a mechanic arts high school should stand for as high culture, and for as rigid and as long continued training as that of any other high school. A manual training high school, then, should be in a building by itself especially constructed for its needs. This building should be in two distinct parts, one part containing class-rooms and the other shops, connected by passages merely, so that the sounds from the shops will not disturb the work in the class-rooms. It should be under the control of a principal, not a mechanic, but a man of broad culture as well as of executive ability, who understands the place of manual training in a wise curriculum, and is able to determine how much time and emphasis should be given to it and to correlate it with the other work of the school. The men placed in charge of the shops should be men of culture and also of thorough practical mechanical training. The teachers in charge of the class-rooms should be men or women of broad culture, but in full sympathy with the manual training idea and willing to coordinate their own work with that of the mechanical department.

The course of study should be strong in culture elements and in science. Literature and history and art should be especially emphasized. These studies can be most beautifully correlated with manual training so that students may receive a broad and sympathetic knowledge of what the growth of civilization means. They view this on all sides, the literary, the artistic and the mechanical. There should be fully equipped laboratories for the study of various sciences and this work also should be closely correlated with the work of the mechanical and literary departments, the biological sciences being naturally allied to the literary and artistic, and the physical sciences belonging in the same

class with the mathematics, mechanical drawing and construction. It should be the aim throughout the course to so relate the shop-work with the work of the class-rooms that unity of impression shall be produced and that all shall tend toward producing the complete citizen.

For the girls there should be special courses offered, including some of those offered for boys and some others. The girls can properly take the drawing courses, courses in modeling and carving with perhaps a little of the joinery. In addition to these they should have offered to them scientific courses in domestic economy such as will equip them to become home-makers. Throughout all of the courses, the culture idea should be predominant, not the so-called culture studies merely, but the culture idea, and all studies and exercises should be made to promote culture for citizenship. The question of time has been raised.

How can all these so-called culture studies be put into a four years' course and the shop work too? Most easily. I know from observation of work done that it is not necessary to materially reduce the class-room work of an ordinary high school in order to introduce the manual training element.

The shop work furnishes so much of variety and exercise and interest that it can be done without increased fatigue by the average boy or girl in addition to the ordinary high school course, so that the cutting out of culture studies to make room for shop work which has occurred in so many manual training schools is not only unfortunate, it is unnecessary. The shop work properly correlated with the work of the other departments, in addition to the physical relief which it furnishes, so simplifies and explains the other work and furnishes grounds for so much broader outlook, that it effects real economy of time.

The mechanic arts high school should be an institution the equivalent in all respects of the ordinary high school with the manual training idea added, or rather incorporated. The predominant aim should be culture for citizenship. The course should be especially rigid in the so-called culture studies, but should include the close correlation of these with the mechanical work, so that the entire course may tend to broader culture as an introduction to life in society. These courses should further lead to the higher technical and technological courses of the universities.

THE COMMON ORIGIN OF LANGUAGE.

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OF gigantic proportions is the question of the Common Origin of Languages. Few persons, indeed, appreciate the magnitude of the question until they attempt to answer it. To appeal to history is in vain, for history does not begin until long after mankind had acquired the power of language. Silent are the most ancient traditions as to the manner in which man came into possession of his earliest thoughts and words. Theologians claim for language a divine origin and in defence of their position refer us to the opening chapters of Genesis. With equal truth and without fear of successful contradiction, we can say that the earth, the sea and all therein are of divine origin. These are simple, natural thoughts and are to be accepted as such, but they explain nothing and do not help us out of the present difficulty. Granting that the first man might have learned a language and that there was a language ready made for him, the question of how that language was made would remain as great a mystery as ever. Science teaches us that while God is all-powerful, He does nothing except in accordance with certain fixed laws no less constant and unchangeable than the author of the universe Himself. Hence it would seem that the task before us is to discover — if possible — these fixed laws which resulted in a means of communication between man and man.

To unveil the mystery of the origin of language, many theories have been advanced and many experiments have been made by scientific men of different ages, but thus far no very satisfactory conclusion has been reached. One of the earliest experiments of which we have any knowledge is said to have been performed by Psammetichus, an Egyptian king, who entrusted two new born babes to a shepherd with the injunction to let them suck goat's milk, to speak no word in their presence and to observe what word they would utter first. It is reported that the children uttered the word "bekos," which in the Phrygian language, meant bread, thus proving, as they supposed, that the Phrygian tongue was the primitive language of mankind. "But how these

unfortunate children came to have the idea of baked bread, involving the idea of corn, mill, oven, fire, etc., seems never to have struck the ancient sages of Egypt." They lost sight of the fact that there is a difference between the power of uttering a few words and the faculty of speaking.

Abkar, a former emperor of India, is said to have made a similar experiment. He had about thirty children placed in confinement before they could speak and had them guarded so that the nurses might not teach them their language. None of the children, however, came to speak distinctly. After three or four years all of those who survived were found to be dumb. The ancient sage did not realize that children in learning to speak do not invent language. It is there ready made for them and has been there for thousands and thousands of years. "A child born of English parents if left to itself will never begin to speak English: such an occurrence is unknown in history."

A prominent physician of New York is now conducting an experiment — similar to those already mentioned — with some of his children, which he has secluded in the region of the Catskill mountains, but thus far his observations have been fruitless.

Believers in the theory of evolution have looked for a solution of the question in some of the lower forms of the animal kingdom. No one can doubt that certain animals possess all of the physical requirements for articulate speech. There is no letter of the alphabet which a parrot will not learn to pronounce. Many brutes and insects, though they do not use articulate sounds for the purpose, have nevertheless means of their own for communicating with each other. It is said that when a whale is struck, the whole shoal, though widely dispersed, are instantly made aware of the presence of an enemy. Marsh, in his Book of Nature, says that when the grave-digger beetle finds the carcass of a mole, he hastens to communicate the discovery to his fellows and soon returns with four confederates. Naturalists tell us that bees communicate the news of the death of their queen by a rapid interlacing of their antennæ. Max Mueller inclines to the opinion that dogs, too, although they do not speak, possess the power of understanding much that is said to them, such as their names, calls, and the directions or orders of their masters. Scotch terriers, shepherds, curs and pointers are especially gifted in this way and approach almost to human intelligence. But Max Muel-

ler, while he is generous enough to accord to animals some degree of understanding, still protests that "Speech, so far as we know, is a specific faculty of man." On the other extreme, we might appeal to Professor Garner, who denies this statement, and endows the chimpanzee with articulate speech. For some time past, Professor Garner has been conducting a series of experiments with chimpanzees, by means of Edison's phonograph, for the purpose of determining whether they have a language of their own. His manner of experimenting is logical and demonstrates conclusively that there is such a language, or Simian tongue, as he chooses to call it. Mr. Garner observed that when food of a certain kind was brought before a chimpanzee, the animal would indicate its desire for the same by certain characteristic grunts. This sound was recorded by the phonograph. The same experiment was repeated with other chimpanzees and the sounds recorded as before. On comparison afterwards, it was found that the sounds were identical. This gave Professor Garner a ray of hope and he at once undertook experiments on a larger scale. His next step was to record the chatterings of two chimpanzees that were engaged in a violent quarrel. When these recorded sounds were given forth again from the phonograph in the presence of chimpanzees which were perfectly quiet, it was noticed that in every case they would immediately become very excited and quarrelsome. Mr. Garner has been untiring in his labors and at this writing has discovered and catalogued a great many words or roots of the so-called Simian tongue. So far as he has been able to judge there is no outward distinction between roots and words, thus establishing as it were another link in the doctrine of the evolution of language. The same is true in Chinese, and it is but natural to suppose that this was the case everywhere during the earliest periods of human speech. For illustration, take the following examples given by Max Mueller: The Aryan root DA, to give, appears in Sanscrit da-nam, Latin donum, gift, as a substantive; in Latin do, Sanscrit da-dâ-mi, Greek di-do-mi, I give, as a verb. However there are no known cases where the root DA is used by itself. But on the contrary, in Chinese, the root TA is used in the sense of a noun, greatness; of a verb, to be great; of an adverb, greatly or much. Roots, therefore, are not as is commonly maintained, merely dry scientific abstractions; but they were in times past, outwardly at least, identical with the real words of a language.

The question then arises, "What inward mental phase is it that corresponds to these roots as the germs of human speech?" To explain this, two leading theories have been advanced. According to the first, roots are imitations of sounds: according to the second, they are involuntary interjections.

The first theory was very popular among the philosophers of the eighteenth century and as it has been held by many distinguished scholars and philosophers, we must examine it with no little care. "According to this theory," says Max Mueller, "man being as yet mute heard the voices of birds, dogs and cows; the thunder of the clouds; the roaring of the sea; the rustling of the forest; the murmurs of the brook and the whisper of the breeze. He tried to imitate these sounds in the same way that a child does, and finding his mimicking cries useful as signs of the objects from which they proceeded he followed up the idea and elaborated language. If this principle is applicable anywhere, it would be in the formation of the names of animals; yet we listen in vain for any similarity between goose and cackling, hen and clucking, duck and quacking, hog and grunting, cat and mewing. However, there are some names as the English "cuckoo" or the American "whip-poor-will," which are clearly formed by an imitation of sound. But words of this kind are like artificial flowers, without a root. They are sterile, and unfit to express anything beyond the one object which they imitate. It is well to note how apt we are to deceive ourselves when once we adopt this system of onomatopoeia. In a word like thunder we imagine that we detect an imitation of the rolling and rumbling noise that usually accompanies an electrical discharge from the clouds. But the root is "tan" which means "to stretch." This root yields some derivatives which are anything but rough and noisy. The English "tender," the French "tendre," and the Latin "tener" are derived from it. The relationship between tender and thunder would be hard to establish if the original conception of thunder had really been rumbling noise. Other instances of this kind might be given, but let this suffice.

The interjectional theory is no less dangerous in its application. According to the followers of this doctrine, man utters cries, sobs and shouts to himself just as he is affected by fear, pain or joy. These cries or interjections are represented as the natural and real beginnings of human speech and everything else

is supposed to have been elaborated after their model. There are, no doubt, in every language interjections, and some of them may become traditional, and enter into the composition of words. But these interjections are only the outskirts of real language. In other words, language begins where interjections end. A prominent English writer says, "There is as much difference between a real word, such as 'to laugh' and the interjection ha ha, between 'I suffer' and oh, as there is between the involuntary act and noise of sneezing, and the verb 'to sneeze.' The attempt to derive our words etymologically from mere interjections must result in failure."

A more reasonable theory than either of the two just considered is the one advanced by Adam Smith. According to this philosopher, the assigning of particular names to denote particular objects is one of the first steps towards the formation of language. Two savages, for instance, who had never been taught to speak, but had been brought up remote from the societies of men, would naturally begin to form that language by which they would endeavor to make their mutual wants intelligible to each other by uttering certain sounds. Only those objects which were most familiar to them and they had most frequent occasion to mention would have particular names assigned to them, The particular cave whose covering sheltered them from the weather, the particular tree whose fruit relieved their hunger, the particular fountain whose water allayed their thirst, would first be denominated by the words cave, tree, fountain, or by whatever appellatives they might think proper, in that primitive jargon, to mark them.

Afterwards, when the more enlarged experience of these savages had led them to observe and their necessary occasions obliged them to make mention of other caves, trees and other fountains, they would naturally bestow upon each of these new objects the same name by which they had been accustomed to express the similar object they were first acquainted with. None of the new objects had any name of their own, but each of them exactly resembled another object which had such an appellation. It was impossible that those savages could behold the new objects without recollecting the old ones and the names of the old ones, to which the new bore so close a resemblance. When they had occasion, therefore, to mention or to point out to each other many

of the objects, they would naturally utter the name of the corresponding old one, of which the idea could not fail at that instant, to present itself to their memory in the strongest and liveliest manner. A child that is just learning to speak calls every person who comes to the house its papa or its mamma; and thus bestows upon the whole species those names which it had been taught to apply to one or two individuals. And thus those words which were originally the proper names of individuals became the common name of a multitude.

Leibnitz, on the other hand, maintains that general terms are necessary for the essential constitution of languages. He likewise appeals to children who know but little of the language which they attempt to speak and but little of the subject on which they would employ it. They make use of general terms, as things, plant, animal, instead of using proper names, of which they are destitute. And it is certain that all proper or individual names have been originally appellative or general. Leibnitz further affirms that nearly all words have been originally general terms, because it would happen very rarely that man would invent a name expressly and without a reason, to denote this or that individual. We may, therefore, assert that the names of individual things were names of species which were given "par excellence" or otherwise to some individual, as the name "Great Head" to him of the whole town who had the largest head or who was the man of the most consideration of the great heads known.

Among the North American Indians it is the custom with some tribes to bestow upon an individual when born, the name of whatever object the mother first sees after his birth. Sitting Bull, a famous Indian chief, is said to have received his name in this way. So with Turkey Track, and many other Indian names, the same thing has happened. In each case a generic term became a specific one.

So much for theories, but how shall we reconcile them? "There is but one way," says Max Mueller; "and that is to try to enter fully into the opinions of those from whom we differ, to make them, for a time at least, our own, until at last we discover the point of view from which each philosopher looked at the facts before him, and catch the light in which each struck his mental vision. We shall then find that there is less of downright error

in these theories than is commonly supposed: in fact, we shall find nothing so conducive to a right appreciation of the truth as a right appreciation of the errors by which it is surrounded."

Perhaps a more logical position would be a view intermediate between those of Adam Smith and Leibnitz. Max Mueller says that Adam Smith is no doubt right, when he thinks that the first individual cave gave the name to all other caves; but Leibnitz is equally right when, in looking beyond the first emergence of such names, he asks how they could have arisen. Upon investigation, it will be found that every individual term expressed originally one out of many attributes of a thing and that attribute, whether an action or a quality, was necessarily a general idea. Lack of space forbids my giving any illustrations of this principle: but it will be evident to every deep thinking person. Sir William Hamilton strikes the key-note when he says, "As our knowledge proceeds from the confused to the distinct, from the vague to the determinate, so, in the mouths of children, language at first expresses neither the precisely general nor the determinately individual, but the vague and confused, and out of this the universal is elaborated by generification, the particular and singular by specification and individualization."

Following in the light of the facts brought out by Professor Garner in reference to the chimpanzee, I hope that I will not be taken to task too severely if I make bold to proclaim the doctrine of evolution in language as a possible explanation of the origin of speech. Beginning with the lowest form of life in the protozoa or protoplasmic state, we find those beings which have no means of communication so far as we are able to judge. Coming up higher in the scale of animal creation, we notice creatures that have not the power to make the slightest articulate sound, yet they seem to have some silent means of communication, as in the case of the whale already mentioned in this article. Passing up still higher in the gradation of life we find beings that possess in some degree the power to utter or imitate vowel sounds. The peculiar but expressive grunt of the hog might be cited as an instance of this stage of development. Here the differentiation of sounds begin. We can not fail to notice the significant sound the hog utters when he is begging for the ear of corn which his master holds just beyond his reach, the unmistakable grunt of approval when he is fed, the grunt of recognition on meeting each

other, and the heart-rending squeal given only when in distress. These cries, which are never given with any change of meaning, are as unmistakable in their signification to man as to the brute. What has been said of the hog is equally true of the dog and many other animals. The cries of nearly all beasts are vowel sounds. Often the mouth is opened before the sound is prepared and it comes straight from the throat without any significant modification. Some beasts advance a step beyond this and approach to the consonant sounds of b and m, as in the bleating of the sheep, the mewing of the cat, or the bellowing of a calf for its mother. Some, however, contend that the m in ma-a-a is a kind of gulp or at best only the nasal semi-vowel m. Some have fancied that the consonant sounds could be detected in the clucking of the hen. We have already observed that the parrot has the power of uttering consonant sounds and of pronouncing every letter of the alphabet. Some other birds, like the raven, possess the power of making the consonant sounds, but not so distinctly as in the case of the parrot. Richard Grant White is certainly in error when he states that it is the consonant which makes the chief difference between the cries of the lower forms of creation and the speech of man. Passing on to the chimpanzee, we come to a creature endowed with the power of uttering all the vowels and semi-vowels and many of the consonants. It is here, according to Professor Garner, that we first notice the elaboration of sounds into language in its crude form. It is difficult for us to conceive of a language devoid of abstract ideas and with few — if any — well marked verbs. But such a thing is not beyond the realm of possibility. The Bush men of Australia are said to be without any definite conceptions of abstract ideas, such as hope, fear, and the like. Instances are on record of many savage tribes possessing a language devoid or nearly devoid of verbs, the idea of the action being indicated by signs.

Lastly in the scale of development we come to man himself made in the image of the All-Wise Creator. According to White, man first uttered formless vowel sounds as he now only utters in early infancy or in idiocy. "These sounds were not language, hardly more than the cries of beasts are intelligible language; but still, being uttered by an intelligent creature, capable of 'discourse of reason' they had some significance. The vowel sounds were in the course of time interrupted, modified, and supported by consonants, without which vowels cannot be put to much intelligent or significant use. Vowel utterance, thus made articu-

late, had, of course, differences; and those differences came naturally and inevitably to be associated with things, with feelings and with thoughts; indeed, were born of such association. Thus roots were formed. These roots were combined and modified as circumstances required; and in this way original language, or perhaps languages, came into being. When this took place, who would venture even to conjecture? Who knows, or can even hope to know, the first state of man? As to Sanscrit, that most ancient and most highly elaborated form of human speech is far adown the ages: and even the language from which Sanscrit and other Indo-European languages are derived represent, we may be sure, a progress through untold centuries from the time when the human consonant turned the merely animal vowel from vague noise into intelligible speech. * * * * "The primitive a (ah) is acknowledged on all hands as the original vowel sound. It is the simplest of all vocal utterances and comes without conscious effort or premeditation from man or child. The first consonant was probably m, that which we find in most Indo-European languages combined with the first vowel in a word which expresses the earliest object of interest to the human creature,—mama, the female breast — and which has become the infant's word for mother almost the world over. Doubtless the combination was first in a single syllable, ma; but reduplication is one of the earliest modes, perhaps the earliest mode, of expressing intensification of interest. M is not, however, to be regarded strictly as the first consonant because it begins the word which is now first used by children: but as children use m first because it is the easiest and simplest means of breaking up the continuity of a vowel sound, and giving it articulation, it is probably the first that was heard. The mere opening and closing of the mouth during the utterance of the (ah) sound gives ma or mama; for what we call the nasal sound of m has to be intentionally avoided. Children now sometimes reduplicate this indefinitely, and say mamamamamama, as they do papapapapapa. The limitation of either word to a single reduplication is arbitrary and conventional, a dictate of convenience. Some linguists regard mama as the result of a childish attempt to say mother. Surely not. The name must have attached itself to the most visible sign and token of motherhood, and then to the mother, from its being the first childish effort at speech. Surely mama long preceded the earliest form of mother or mater. To m probably succeeded b and p, which are so closely related to m that they are mere modifications of it, as any one will see who tries a few experiments in the production of these three consonants, which are produced by the lips alone, and are therefore called labials; for m can be sounded, although not continuously, with the nostrils and even the whole nose tightly closed. The first use of the tongue as an interruption and modifier of vowel utterance probably produced d and

this was followed by t, which is merely a stronger d, as a similar experiment will show. L and r soon followed; and as to the order of the succession of the other consonants, I shall not here venture an opinion, nor does our purpose require that I should do so."

These views of White so nearly coincide with my own that I have quoted the last extract from him *ad literatim*. There is much more that could be said on so broad a subject as the one we have under discussion, but I shall leave that for writers who have made a more thorough study of the subject. An exhaustive treatment of the subject is quite beyond the compass of an article like this. The doctrine of evolution in language is as yet in its infancy, but the time is not far distant when it will be as well established as the doctrine of evolution in the origin of species.

FIRST WORK FOR GIRL GRADUATES — A BOOK REVIEW CLASS.

CHARLOTTE R. CONOVER, DAYTON, OHIO.

LAST June sent a small army of graduates from colleges and seminaries forth into the world; bright, ambitious girls with high purposes, sound bodies and brave hearts. Some of them have finished the college course only by means of self-sacrifice on the part of the dear home-stayers that cannot be dwelt upon without the feeling that this *must*, in some way, be repaid. There is a mother who needs a change and a rest, young sisters who want so many things that elder sisters ought to give; on every side there is a call for *money*, that sordid despicable commodity which, however we may try to rise above it, will thrust itself, or the need of itself, between us and the fulfilment of life. Here is a young head stored with four years of Literature, Greek, Mathematics, and a willing spirit back of it. How to utilize both!

The graduate hopes to teach, but schools do not grow like blackberries in July; besides, after each application for a position comes the inevitable question, "What experience have you had?" So, the following suggestion may be found to answer both queries, — "How to make a little money?" and how to gain experience in teaching?

Some man, who ought to be famous after having made such a good suggestion, said, "Every college should have a Professor of Books." If every college, then why not every town? Therefore my dear college girl be a Professor of Books to your city. There

are everywhere, both in large cities and small towns, scores and scores of women who have been passed by in the whirling of this planet and the things on it. The education of their girlhood filled them only with a quota of technicalities and not with the desire to continue in intellectual growth. Marriage came hard upon school life and then baby-tending, servant worries, sewing and mending; a narrow round, growing narrower each year. Some day the house-wife wakes up and feels that she is being left behind her children but it is hard to know what to do about it. The habit of study has been lost under the pressure of ever-present, never-ceasing demands upon "mother." Perhaps there is a club in the neighborhood, but the fame of the wonderful essays read on that platform makes her shiver to think of attempting to do her part in it. Here, then, is your field: You who have heard courses on "Ibsen" and the "Victorian Drama"; have browsed in a department library and had your teacher of Literature "on tap" for four years of stimulus. Get some of these women together and talk to them informally about books, the treasures of life. Lay your plan before them simply and clearly; make your class large and your PRICE LOW. These are hard times and "knowledge is now no more a fountain sealed." Even if you begin with a few, the interest will grow. Take some good book each lesson and review it, tell the story of it. Begin by a short sketch of the author and the circumstances under which the book was written; then make a resumè of the argument of the book by means of the chapter headings in the table of contents. From time to time read passages aloud, those which by their strength carry the vital idea of the book. I should say talk half the time and read half the time. A biography should be selected for one lesson, travel for another, essay or letters for a third and history also, provided it is new-fashioned history and not old-fashioned history; topical and correlated rather than narrative and statistical. Thus your trained mind with its fresh fund of information, will carry the untrained mind past the difficulties of a technical or philosophic style and give it a start to the enjoyment of solid books. If they read the books between times themselves and create a "run" on the public library then you may feel that you are succeeding. At any rate the responsiveness of such a class will be your inspiration: you will find yourself talking easily and without self-consciousness and this will be the second half of the experiment, — its value to *yourself*.

A school-room is a formidable place: one needs there much besides a knowledge of the subject to be taught. No wonder school trustees cry for "experience"; they know what a shivering, quaking ordeal it is to be a novice, and, what is worse for the novice, the pupils know it to. Therefore the young teacher needs the habit of facing eyes, the habit of hearing her own voice, of choosing the best expression for her thoughts. All this she can get in the Book Review Class and for this reason she can afford to make the price so low that those of limited means may avail themselves of it.

As to a choice of books, the following have been found to answer admirably: for travel, Miss Edwards "Thousand Miles up the Nile," (with photographs, if possible, and constant cross references of Biblical History and Egyptology,); Nansen's "Farthest North"; Whymper's "Scrambles among the Alps," and "The High Andes"; Stanley's "In Darkest Africa"; Miss Bird's "Unbeaten Tracks in Japan"; Lady Burton's "Travels"; for biography, — Lockhart's "Scott"; Julian Hawthorne's "Life of Nathaniel Hawthorne"; "Life of Charles Kingsley," "Life and Letters of the Baroness Bunsen"; "Letters of John Adams and his Wife"; "Personal Recollections of Mary Somerville"; "Life of the Earl of Shaftesbury"; for history, Mackenzie's "Nineteenth Century," is good; or Taine's "Ancient Regime"; Emerson's "Essays" will always "take," if one does not choose his super-transcendental ones; "Domestic Life"; "Self Reliance"; "Books"; "Manners"; "Compensation"; "Gifts"; are all useable and helpful. There will be much that is inspiring and practical in Ruskin: his "Crown of Wild Olive"; "Sesame and Lilies," and parts of "Fors Clavigera." Carlyle is more difficult, on account of his double bow-knot way of saying things, but his "Miscellaneous Essays" will yield grand material. For other books, — Herbert Spencer "On Education" will attract all mothers; Von Suttner's "Ground Arms" will be interesting in connection with the question of International Arbitration. For good old books try "Bacon's Essays," and "Locke on the Human Understanding"; you have no idea how the COMMON SENSE in these two books strikes practical people. Sociology and political economy may be administered in homeopathic doses, and a good beginning to these not very popular subjects may be brought out in the use of any of Richard T. Ely's books or Washington Gladden's. Bellamy's two

volumes, "Looking Backward" and "Equality," will bring forth discussion, but care should always be taken to separate the books that have from those that have little or no literary quality and to point out the style, or the lack of it, in each case. Novels are not advisable unless asked for; most people read too many novels anyway.

It is enough to say that this sketch is no "studio landscape," an idea elaborated at a desk, but a practical and already-tried way for a bright girl to keep the cobwebs out of her brain (and other people's) and earn her lecture tickets for the winter of 1897–98.

MEMORY AND ITS CULTIVATION.

PROF. F. B. DENIO, BANGOR, MAINE.

VALUABLE literature: Doerpfeld's Thought and Memory, Lukens. Ribot, Psychology of Attention. Hoeffding, Psychology. Kay's Memory. Down's Memory and Thought Series. B. F. Austin, Rational Memory Training. W. W. White, Natural Method of Memorizing and Memory Training. Ribot, Diseases of Memory. Aiken, Methods of Mind Training.

Principles concerning memory found of importance by a teacher.

I.

CONDITIONS OF MEMORY.

1. It is to be noticed that the will and feelings are both interwoven with every cognitive act, hence no exercise of memory is free from elements of feeling and will.

2. There are two functions which are included under the term memory: the recording memory and the recollective memory. The recording memory is the recording, if the word may be allowed, of the passing experiences of the mind, that is, of whatever appears in consciousness. The recollective memory is the recalling to mind whatever has once been in consciousness.

3. There should also be recognized a distinction between the spontaneous memory and that which is voluntary. Spontaneous recording memory is simply the record, without conscious volition, of such elements of experience as capture our attention. Spontaneous recollective memory is the recalling of whatever has been

recorded in the past as the passing experiences or thoughts of the present bring up the past by the laws of association.

4. Voluntary memory is either the intentional recording of anything so that when it recurs to the mind it is distinct and certain for the mind; or it is the recollecting at will, anything that has been in the consciousness. The power of recollecting may not be so good as the power of recording, or vice versa.

5. The two forms of memory, spontaneous and voluntary, exhibit the same principles of action.

6. For recording memory attention is necessary. Spontaneous memory depends upon spontaneous attention. Voluntary memory depends upon voluntary attention.

7. As attention is the basis of recording memory, it requires special consideration.

II.

ATTENTION.

8. In the ordinary experience of the undeveloped mind, there is a constant stream of sensations and perceptions, and the mind is subject to any call or influence from without it, with occasionally an experience vivid enough to cause the mind to linger a moment in its contemplation, but only for a moment, for the oncoming stream of experiences as a flood carry the mind away to note something else. This momentary delay is spontaneous attention. Surprise is perhaps most effective in securing spontaneous attention.

9. In infancy the child's control over his muscles is similar to the attention just described. The simplest element of voluntary attention appears when the child begins to gain the power of coordination, as it is called, and learns to control his limbs and fingers, and in fact all his voluntary muscles. This control is gained in part by the acquirement and exercise of what is called inhibition, i. e., the restraint of all spontaneous action of the muscular system apart from a chosen purpose.

10. Voluntary attention is the persistent lingering of the mind for the contemplation of something in which it is interested.

Ribot: "Attention consists accordingly in the substitution of a relative unity of consciousness for a plurality of states, for the change which constitutes the rule. * * * Attention has an object; it is not a purely subjective modification: it is a cogni-

tion, an intellectual state. * * * It is an intellectual monoideaism, accompanied by spontaneous or artificial adaptation of the individual. * * * Attention consists in an intellectual state, exclusive or predominant, with spontaneous or artificial adaptation of the individual."

From Sully: "What is called giving attention to one thing, is, strictly speaking, the following a *series* of impressions or connected ideas, with ever renewed and deepening interest. For example, when we witness a dramatic representation. * * * And even a prolonged attention to a small material object, as a coin, or a flower, involves a continual transition of mind from one object to another, one set of suggestions to another. Hence it would be more correctly described as making the object the *center* of attention, the point from which it sets out and to which it continually reverts."

Hoeffding: "It is precisely the gathering of energy round some one idea as the center of association which constitutes attention."

11. The condition of spontaneous attention is interest; this it is which arrests the mind for a few moments.

12. The condition of voluntary attention is also interest, which may be intensified or even created.

Ribot: "Are the movements of the face, the body, and the limbs, and the respiratory modifications that accompany attention, simply effects, outward marks, as is usually supposed? Or, are they, on the contrary, the *necessary conditions, the constituent elements, the indispensable factors of attention?* Without hesitation we accept the second thesis. Totally suppress movement, and you totally suppress attention. * * * The fundamental rôle of the movements in attention is, to *maintain* the appropriate state of consciousness and to *reinforce* it. * * * The process through which voluntary attention is formed may be reduced to the following single formula: to render attractive by artifice, what is not so by nature; to give an artificial interest to things that have not a natural interest. I use the word interest in the ordinary sense, as equivalent to the periphrase: anything that keeps the mind on the alert. But the mind is only kept on the alert by the agreeable, disagreeable, or mixed action of objects upon it, that is, by emotional states. With this difference however, that here the feelings that sustain attention, are acquired,

superadded, not spontaneous as in its primitive manifestations. The whole question, accordingly, is reduced to the finding of effective motives; if the latter are wanting, voluntary attention does not appear."

13. Attention is secured

(a) through the muscular effort needed to express thought,

(b) through the audible word which comes to one, and expresses thought,

(c) through the visible word which images thought.

It is conditioned in its voluntary form by the power of inhibition against distracting influences.

Ribot: "Attention is a momentary, provisional state of the mind; it is not a permanent endowment, like sensibility or memory. It is a form (the tendency to monoideaism) imposed upon a subject matter (the ordinary course of states of consciousness); its point of departure lies in the chance of circumstances (spontaneous attention), or in fixing in advance or a determinate aim (voluntary attention). In both cases, emotional states, tendencies must be awakened. In this we have the primitive *direction* of attention. These lacking, all else miscarries; if they vacillate, attention will be unstable; if they do not continue, attention will vanish. A state of consciousness having thus once become preponderant, the mechanism of association enters into play in its multiple forms. The work of "*direction*" consists in choosing the appropriate states, and in maintaining them (by inhibition) within our consciousness, in order that in their turn they may fructify, and so onward through a series of selections, inhibitions and consolidations. Attention can accomplish nothing more than this; in itself it creates nothing, and if the brain be sterile, if the associations are poor, it will act its part in vain. Voluntarily to direct one's attention, is for many people an impossible task; contingent, for all."

14. In the study of a language there are to be noted the three modes of securing attention noted above:

(a) the sound of the words,

(b) the muscular movements by which these sounds are produced,

(c) the symbols by which these sounds are represented.

To some persons the word seems to exist in one of the forms alone, rarely do all three forms exist with equal power for any person.

15. In the study of a language much depends upon the intensification of interest. The inhibition from all that distracts from the center of consciousness proper to the subject of attention is necessary; in short it is the true self-control, or self-mastery of mind, centering the whole power of the mind on the point that deserves attention.

16. This necessitates a deliberate cultivation of those feelings which keep the mind on the alert. Such feelings are those of the value or importance of the object to which attention is directed, the pleasure in mastering the study itself, or in gaining knowledge, the pleasure in the mental activity for its own sake, hope of increased knowledge and power for future labors, the gladness which attends the performance of duty.

17. It is necessary to cultivate the habit of inhibiting all distractions, and of having the mind revert directly to the center of attention whenever it has turned aside from the center to some point subordinate to the main one.

18. Attention such as has been discussed will give the mind increased power of the voluntary recording memory. Other means must be employed to strengthen the recollective memory. These are the voluntary use of the principles of association.

III.

PRINCIPLES OF ASSOCIATION.

19. Every state of the mind, every unit of consciousness is complex. The number of elements in any unit is very great. You listen to these words, their meaning, the tones of the speaker, his appearance, this stand, your own wonder how the lecture may benefit you, some memory or memories of the past suggested by one or more of the elements already named, and still other elements all fuse together in your mind into one unit of consciousness. It is like the objects within the range of vision. To-morrow some one of these elements will doubtless recur to your mind, and one or more of the others will follow, and will be recalled by you according to their relative intensity of first impression. The psychological principle is that when any element of a past state of consciousness recurs to the mind it tends to reproduce the whole of that state of consciousness. Now this reproduction is recollective memory and it may be either spontaneous or voluntary.

20. There are two general laws of association:

(a) association according to similarity, i. e., according to the inner character of that which is associated, logical memory;

(b) association according to contiguity, i. e., according to the external relations of what is associated, local memory.

The relations of similarity are many and may be grouped as follows: cause and effect, means and end, whole and part, abstract and concrete, resemblance and contrast.

The relations of contiguity include coexistence or immediate succession in time, coexistence in space or in experience or in history.

21. Contiguity is the association of immediate coexistence or succession in consciousness whether as related to time, experience or space. It is probable that a large part of the spontaneous recollective memory, and revery which is little else, is the result of this principle of contiguity. By this even a series of words, unrelated to each other in any way aside from contiguity, may be associated in definite order as having come successively into consciousness. (a) Association of contiguity in the experience of the senses. Here is to be noted the association with the sense of smell, which is the most sure of the senses to recall a past experience. One phase of verbal memory is of this sort, the association of particular words or phrases in a sentence, rather than that of their synonyms is an association by contiguity. It is due to the impression of a certain sound in a particular sequence. No other word "sounds right." This also explains the formation of correct or grammatical speech, or of correct pronunciation of words. This is the association which makes correct and elegant diction possible. It is the association by contiguity which makes it possible to recollect the form of an object, as for instance a misspelled word will not "look right."

(b) Association in the coexistence or immediate succession of experiences in consciousness, as described in 19 above, is association by contiguity.

(c) Association of coexistence in space may be in one of two forms; one is that of contemporaneous existence in space, where a place seen but once, when seen again brings back the experiences associated with that place and all objects seen at that time; the other is when a place suggests any circumstances or experiences which have been associated with that place at various times in the past.

(d) Experiences associated in the sequence of time, as when we are enabled to recall the events of a day in the order of their occurrence, and when there seems to be no other way of bringing them back to memory.

(e) It is a different form of this association by contiguity which fixes the events of history in their time and place.

22. The value of the association by contiguity varies for different persons. In general it varies with the vividness of the action of the senses, together with the vigor with which one can reproduce the impressions of past experience. For the sake of good memory it is desirable to cultivate this power of bringing up the past impressions of the senses.

Again, the associations which are constituent elements of a single unit of consciousness may be expected to be stronger than those of successive units of consciousness.

The element of attention is of the highest importance. Tennyson, Maud, xxiv., 8, notes how the lover catches a glimpse of the ring of the brother of Maud as he lies apparently lifeless, and later remembers it thinking it had a lock of the mother's hair. The mind wrought up by feeling has a wonderful alertness. The student wrought up with an earnest purpose, with intensity of will has a power of recording memory which is wonderful, even though it be by the relation of contiguity which is regarded as inferior to that of similarity. The fact is that the association by contiguity is at the foundation of all memory.

Next to attention comes the practice of repetition, which is essential to the success of an attempt to gain a lasting memory record by the association of contiguity.

23. The association by contiguity would give an infinite number of details for the memory to carry, but very largely in a chaotic condition. Where this association is regnant the way to recall anything is to follow a series of experiences until we light upon the one we wish. E. g., a person who can repeat whole chapters, even, or books, in the Bible may be compelled to begin at the beginning and repeat on until he finds a particular verse.

Ordinarily the mind works by the association of similarity as well as that of contiguity. It is equally fundamental, for it is the condition of knowing that sensations are diverse as well as contiguous, and it is capable of far more elaborate development than that of contiguity, and consequently requires a higher degree of education.

While the association by contiguity gives material for the picturing imagination, the association by similarity is essential for the constructive imagination.

The thought process dominated by the recognition of similarity and dissimilarity, with the tendency to classify all objects into general and to differentiate general into species by noting dissimilarity gives the memory an opportunity to hold with ease the chaos of knowledge presented by the association of contiguity. In this way realms of thought are mastered which could not otherwise be entered.

24. The principle of similarity or logical memory is at the basis of perception and thought alike. In every sensation there is the recognition of unlikeness to the sensation immediately preceding. All judgment, and the judgment is the unit of thought, is the affirmation of likeness or unlikeness.

In association by similarity the principle of the unity of consciousness is that an idea tends to recall a similar idea, an experience to recall a similar experience, a sensation to recall a similar sensation.

25. The kinds of similarity:

(a) Cause and effect. Under the relation of contiguity it is simply that of succession, but when we have attained the idea of necessary connection we have passed into the realm of thought where comparison and the principle of similarity rules.

(b) Means and end. This is somewhat like the preceding, but is viewed from the opposite end of the series.

(c) Whole and part. This is similar to the relation of local coexistence, but at the same time is the result of classification on the principle of genus and species; and it implies necessary, not accidental relationship.

(d) Abstract and concrete. Here again is the idea of classification, of association by similarity, where the mind passes from the idea of the individual object to that which in the object is like qualities in other objects.

(e) Likeness specifically in

(1) sound. This is external, and is often a means of association. It is why a German or a Latin vocabulary is more easily learned than the Greek, and why the Greek is more easily learned than a Hebrew vocabulary.

(2) Appearance. This helps toward the classification into genera and species.

(3) Meaning. Synonyms suggest each other.

(4) Use of objects, as *pen* and *pencil*.

(f) Unlikeness. This is a means of differentiating objects which in part are alike, or have some feature of likeness, or are associated in part through a contrast.

(1) Sound, as *hum* and *click*.

(2) Appearance, as *round* and *square*.

(3) Meaning, as *hard* and *soft*.

(4) Use, as *ice* and *fire*.

26. Association by contiguity is present in all associations by similarity. Yet association by contiguity when occurring by itself is often stronger than when a constituent with the association by similarity, for it receives more attention and is the object of more interest, and moreover the feelings often arouse the mind to a degree of alertness that is not often present in the act of thought.

Similarity may be merely recognized by the mind, in which case there is little difference from association by contiguity. It may be mentally affirmed with some degree of emphasis, and this is somewhat like an alert mind noting the association by contiguity. An object may be explicitly grouped with a large class of similar objects, this has the value of repetition, therefore thought, the classification of objects, the observation and affirmation of their likenesses gives the association of similarity in its voluntary use as thought, all the power of recording memory which is possessed by association by contiguity in heightened attention and with much repetition.

27. The mental operations in voluntary recording memory are chiefly as follows:

(a) Observation of concrete details or of ideas; these may be largely new and by impression on the mind due to careful attention may be quite firmly fixed, as by intuition or direct observation. The association by contiguity is here predominant.

(b) Wherever it is possible it is best to connect the newly observed object with what is already fixed in the mind. This stage of observation is most important. The formation of some association of similarity with some object already a part of the mental furniture is valuable in the highest degree. Thereby is formed the double association of similarity and contiguity, e. g. in the study of a language a new word is connected with one already learned.

(c) Thought proper. In comparison and by judgment concepts are formed. This bears on the study and learning of grammatical principles and forms.— Lukens, p. 105.

(d) The application of all these, when the student thinks other objects under the conception which has been formed. He applies them to other cases, he makes illustrations and puts them under the principles already noted. Thus he puts his thought into another language and judges whether this mode is correct.

IV.

APPLICATION OF PRINCIPLES.

28. The problem of recollection is to make it sure that the recording memory forms such associations as enable the mind readily to recall that which it wishes to recall and when it wishes to recall it.

Lukens: "To commit to memory means to make the ideas in question capable of reproduction, and, as far as possible, of faithful, rapid and many-sided reproduction."

29. The art of developing the memory by contiguity. This must come into operation when the principle of similarity cannot work. In this case there is to be sought intensity of attention, of intuitive impression, of the direct sense association with all the energy possible, and if it may be with the element of surprise and suddenness. This and the element of iteration, producing the two in consciousness together seems to be psychologically the scientific method of producing the association by contiguity. In such a matter as in learning the vocabulary or inflections of another language in instances where no association of similarity is present, it will be found that there are three points of mutual support in forming the association:

(a) the sound of the word,

(b) its meaning,

(c) the characters by which it is represented.

This is in accord with 14 above. It is mechanical, but it is the only mode possible for some parts of the foundation of the knowledge of a language. It is to be confessed that it is irksome in some measure to minds which have become habituated to form their associations by similarity.

30. Exercises in this recording memory:

(a) as in learning a new alphabet, in Greek, German or

Hebrew. Having observed a letter, close the eyes and recall its form so as to see it, then look at the letter and see if the form was correctly imaged, then write it at the same time giving it its appropriate sound. Take a second letter and deal with it the same way. Then without looking at the printed or written letter recall the first one with closed eyes and write it. Do the same by the second letter and then take up a third letter in the same way as the first and second, after which, recur to the first and second as formerly to the first. Go thus through the entire alphabet, when it will be found that it has been learned in a manner probably better than could be done in any other way. It will be found that the latter letters of the alphabet will need less attention than the first, for the mind will have acquired a habit of noting the peculiarities of the form, and will be differentiating some letters from the earlier ones, thus using similarity as well as contiguity, and adding the thought process.

The process of writing intensifies the attention and adds the aid of repetition.

Uttering the sound adds an intensification of attention, and a repetition.

(b) The mastery of a new vocabulary may be similar in method. The whole word may be imaged with closed eyes, pronounced at the same time and afterward written without recourse to the printed characters. The threefold mode of fixing attention, intensifying it and repetition should be followed. Words should be learned in phrases also so as to get the association of contiguity stronger.

(c) In the pronunciation of the language the recognition of the meaning of words should be cultivated, and thus avoid the translation of them, but the meaning should be thought whether read with the eye, or heard by the ear.

(d) The student should be on the watch to find elements similar to what has already been learned.

31. The teacher needs to hold in mind the following:

(a) whatever is to be remembered needs

(1) to be presented in such a form way as most fully to secure the attention of the scholar, and thus make it as easy as possible to secure vivid impression,

(2) and help, if possible, to some principles of association by which that which is to be remembered may be fixed and recalled.

(b) The principles are to be mastered so that

(1) each principle shall be clearly present to the mind of the scholar,

(2) and that each scholar may be able to hold the principles clearly in mind when applying them to individual instances.

(c) To make sure of the results, ask questions so as to

(1) ascertain whether the scholar knows a fact,

(2) and to ascertain whether he clearly judges correctly of a fact, whether he sees that it belongs under a class, or to bring him to the point of expressing a judgment and thereby fill out the segment lacking in the circle of his knowledge, or by judgment to bring to his consciousness the connection of the subject and predicate.

32. Habits to strengthen the memory.

(a) The cultivation of the habit of accurate statement. Truthfulness is an excellent auxiliary to good memory. The liar loses accuracy of memory because he loses a motive for accuracy of observation. The person who desires to tell the truth, desires such accuracy of observation and of recording memory as shall insure truth, and this aids attention, and thus a good memory. There is a great difference between the will to know things as they are, and the desire to see things as we wish they were.

(b) Cultivate constantly the habit of close attention to all work; study how to avoid mind-wandering; exercise the will in gaining self-mastery, and by way of help to attain this result:

(c) read no literature needlessly, avoid as far as possible the dissipation of mental power which comes from the reading of such parts of daily and transient literature as you have no care to retain.

(d) Do your work so far as possible when the body is in the best condition, and plan to do this, and strive to keep the body in the best condition. Take all needed physical rest.

SOME BIOLOGICAL ASPECTS OF CHILD STUDY.

CHARLES D. NASON, PHILADELPHIA, PA.

THE child study movement is one productive of great consequences in education. Teachers are everywhere watching for childish traits and tendencies, while scientists in their laboratories are conducting psychological experiments and making anthropometric observations; mothers, too, are interested and the vocabularies of the babies are compiled and useful observations made on children at all stages of development. The results of all this activity will ultimately be of vast value to every teacher, for in careful child study lies the basis of scientific teaching. Just at present, however, the criticism is often made that there has been little advance due to the movement. While this criticism is, in all probability, just, it is due to the essentially scientific character of the study rather than to any fault inherent in the study itself. The science of paidology is, at present, in the data-collecting stage and the science itself must first be developed before any great practical results can come from it. In the future the grand general underlying laws are to come, but it may be well to suggest at this time a few biological considerations which may add interest to the study and also serve as centres around which may be grouped many of the seemingly unrelated facts that are pouring in from all sides.

In the study of biology, Spencer's law concerning the relative increase of mass and surface has explained various problems. In child study, too, we find a corollary of this law doing yoeman service in explaining the activity of children. We have all seen a child running all day long without seeming at all fatigued and it has been a cause of wonder to many. The question is, "How can an undeveloped child exert so much energy?" A single sentence in Spencer's *Principles of Biology* explains the difficulty: "In consequence of the law that the strains that animals have to overcome, increase as the cubes of the dimensions, while their powers of overcoming them increase only as the squares, the movements of an adult animal cost very much more in muscular effort than do those of a young animal: the result being that the sheep and cow exert their muscles much more vigorously, in their quiet movements, than the lamb and the calf in their lively movements." Thus the generally observed fact of the activity of children is explained, but it is not with details that we have now to do, but rather with the biological method of thought in its relation to the study of children.

Less than forty years ago, Darwin gave to the world a book which has had a greater influence in the scientific world than any other single work. Dull, uninteresting facts, collected merely because they were facts, took on a new significance; the common practices of the fancier or of the stock-raiser became every day subjects of conversation of savants. This book revolutionized the whole scientific conception of the universe. Darwin's *Origin of Species* caused a tremendous intellectual convulsion. Doctors, lawyers, clergymen, scholars, everyone felt called upon to prove the error of the evolutionary hypothesis. The controversy became even greater when Darwin published his *Descent of Man*. It was especially aggravating to have the structure of one's ear and the method of the arrangement of the hair on one's arm as a perpetual reminder of our Simian ancestry. Gradually, however, the novelty wore off and the people discovered that it did not make much difference, after all, where we came from so long as we are the highest product of evolution. The developmental theory would seem to point to the fact that in babies we must look for the closest resemblance to our ancestors, whoever or whatever they may have been. Now-a-days the general belief among scientists seems to be that man is descended from the arboreal monkeys or from monkey-like animals, and if you will observe carefully the babies that come under your observation you can easily see good reasons for this belief.

The face of a child shows very prominent landmarks which at least suggest the long journey from an animal ancestry. The baby's nose is broad and flat and the bridge is concave, very much as in the monkey. On the edge of the little pearly shell of the baby's ear there is often seen a point projecting inward. This shape of the ear persists and this vestige of the high, pointed, leaf-like ears of many of the lower animals may often be seen in adults. It will be remembered that Donatello, in Hawthorne's *Marble Faun*, had this characteristic strongly developed. Not only in the nose and ears, but in the receding forehead and the projecting jaws does the baby resemble its monkey-like ancestors. The furrow below the nose, too, shows the point of junction of the two distinct lips such as are seen in the lemurs. The baby in its embryonic stage had two lips which were afterwards connected by this piece of depressed flesh. As showing how science takes away some of the poetry from old ideas, it may be mentioned that scientists tell us that the puffed cheeks of the cherub are a vestigial relic of the cheek pouches of monkeys. And the tail itself is represented by the depression at the base of the baby's spinal column. Then, too, the instinctive attitudes of babies is adduced as another consideration as pointing to their descent. Folk lore and the songs of the nursery do their part in pointing back to a time in the early history of the race when the remembrance of their previous animal condition remained in tradition. These are, of

course, only a few of the many considerations that are given. The story is now too old to need repetition, it is sufficient merely to suggest it. The study of embryology acquaints us with many more proofs of descent and paleontology adds its store, but the child itself presents proof enough to satisfy most minds. When studying children it is well to understand the deep significance of the facts observed.

Putting aside the evolution of physical form, let us look a moment at mental evolution. Here we are met at the outset by a very manifest difficulty. Some scientists have postulated that Man is the only intellectual animal, whereas others have ascribed to animals low in the scale of development great intellectual powers. Another difficulty is that man in investigating the mental processes in the lower animals has to picture their intellectual operations from the analogy of his own. Herein the various observers differ so radically that no uniformity can be said to exist in their conclusions, although all evolutionists agree that there has been a gradual development of intellect from the lower animals to man as we now find him on the earth, — some going so far as to state that in the *amoeba* there exist the germs of all the mental operations of a Shakespeare or of a Darwin. When, however, we come to study mental evolution in the genus *Homo* we are traversing better known paths. There is a pretty well defined series from the Bushmen of South Africa, whose mathematical powers can fathom only so deeply as the number four up to a Newton; from the Fuegians who possess no abstract words up to an Immanuel Kant.

But when we look at mental evolution among men the study of children assumes great importance. Not only is it of value as showing the course of mental development in the individual but, from the operation of the biogenetic law, it is a study of the mental evolution of the race. This biogenetic law which is of so great importance in all biological investigation, states that the ontogeny, or the course of development of the individual, is a short recapitulation of the phylogemy, or the course of development in the race. With such a statement before us, we should expect to see in the infant, in the child, and in the youth, distinct steps in the development of the human species. Whether or not these steps are shown in the lower animal creation we will leave to the scientists to determine but the student of paidology will do well to ponder on this basic law, as it will explain many of the observations made on children. The mental operations in a civilized child will be found to correspond closely to the mental operations of an uncivilized adult. The development, in the child, of religious ideas, too, will be found to conform to the development of the same ideas in savage tribes. It is only with the old age of civilized persons that religious ideas commonly reach that nobility and grandeur to which we feel instinctively

that we are progressing. It is only in these latter days that we are beginning to realize that the highest evolution comes about by the "struggle for the good of others." The process of this development, it is the province of child study to find out. The opportunity is presented in every class-room and in every home.

The study of mental evolution from the lower animals up to man is then, one the difficulty of which relegates it to those specially equipped for it. The investigations of such scholars will, however, be of indirect value to teachers and many interesting considerations will be brought forward which cannot fail to make child study attractive. For instance, let me quote a couple of detached sentences which Romanes has in his *Animal Intelligence.* Imitation, we all know, is especially prominent in monkeys. "This same sort of tendency is often observable in young children, so that it seems to be frequently distinctive of a certain stage or grade of mental evolution and especially in the branch Primates." Another sentence: The class of emotions in fish correspond "with that which is distinctive of the psychology of a child about four months old." The conclusions of Romanes are adversely commented upon by C. Lloyd Morgan on the plea that he projects his own personality and intellect into the observations taking the outward and visible sign of intelligence in animals and forming conclusions based on his own intellectual operations. The great danger in all such investigations is that of leaving out of account some of the grand, all-pervading factors which present themselves in the human species but which no scientist has recognized in the lower animals. The environment of a civilized man has almost nothing in common with the environment of the domestic dog.

When we come to consider heredity in its relations to child study we are in the presence of a great problem. While we all know the force of heredity and see it evidenced everywhere about us, the scientific study of the problem is one of especial difficulty. This arises as much from the fact that it is a matter still disputed whether characters acquired in the life of an individual are ever transmitted to the offspring as from the fact that the parents are but seldom known to the teacher. Both sides of the question of the transmission of acquired characteristics has eminent adherents although I think it safe to say that the majority of biologists of the present day incline to the belief that acquired characters are not transmitted. Musical and literary families extending over many generations are accounted for in other ways. The scientific consideration of the question in the way in which Weismann treats it is impossible for the general student of children, but a great many facts can be gathered by teachers in their classes and from these facts can be adduced general principles of great value. From a teacher's paper I take a query, with its answer, as affording an excellent instance of what practical results child study

may have. It matters not how or why the child resembles its parents; it is sufficient to know that such is the fact. The How and the Why we will leave to the biologist in his laboratory.

Q. "I have a most troublesome pupil: one whose attention it is impossible to hold.

A. "The condition, mental and physical, of the various pupils has so much to do with progress, that no two children can be measured by the same standard. In the savage, the child, and, it is to be regretted, in some adults, every sensation from without distracts the attention, and leads to some movement. . . .

"Let me illustrate. L. C. is a most restless, apparently inattentive pupil. It was the fortune of his teacher to occupy the pew in church near the C's. The father of the family was an example of perpetual motion. At every foot fall, his head turned to observe the new arrival; if no one arrived, tattoos were beaten with his fingers; leaves of prayer book thumbed; contents of pockets examined; fan opened and closed, and so on to the point of distraction.

"L. C. sat by his sire, and what was not his through inheritance became his through imitation. No more can the child be unlike the progenitor in tendency than in tint or texture. If the ancestor be coarse and crabbed, the descendant is not usually fine and fair. Would you detain a boy after school because he had a Roman nose."

The teacher has before him all the time abundant material for the study of hereditary tendencies. The prenatal influences of the child are always difficult to determine but generally reward the effort one may make to find them out. The son of a drunkard we half expect to take to drink but when several generations have been hard drinkers, the impulse is almost irresistible. The child is caught in a vast maelstrom the swirl of whose waters overpowers him. The children of actors have an ever-present longing for the glare of the foot-lights and the sea of faces. In some cases a wide-spread tendency will be found to exist and the ramifications of a family under such conditions may exemplify the persistency of hereditary tendencies. In New York a family was found descended from a woman known as "Margaret, the mother of criminals." The criminal, pauper and diseased characteristics of this family were shown in six generations. The number of descendents reached over a thousand and in seventy-five years the commonwealth lost over a million dollars through the offences of this family. Whether the blind force of heredity is the sole cause of such cases or whether surroundings and imitation have the greater power, it is, at present, impossible to determine.

We see that heredity is not an easy subject to study but we also see that it is a branch of science that is destined to have great results from the prolonged study of children. When the

observations have extended beyond the second generation, the results will be more valuable. As the time covered by the observations becomes greater and greater, the results will be more and more significant. The study of children will have much the same importance as a laboratory of experimental evolution where the question is put to Nature in one generation and answered after a long term of years of experiment. With a series of observations covering several generations, the transmission or non-transmission of a character may be determined and, by a process of exclusion, the influence of the environment may be given something like its true place among the factors of evolution.

Man may be called the product of two grand sets of influences, the influences of heredity, those which he brings with him into the world, and the influences of environment, those which he gets from the world. Environment, then, includes a great many widely separated groups of influences. It is not merely the climate, the paving of streets, the schools, our friends, but also the thoughts of Plato, the Renaissance, the coming of Christ. It comprises within its magic circle every worldly and spiritual influence. The study of the interrelation and interdependence of Man upon his environment is most interesting; and educators are placed in a peculiarly favorable position for such study. Coupled with heredity and vivified by evolution, the researches into the environment of children assume an immense value as showing, in some degree. the seemingly little things of this world which have such tremendous consequences. It presents forcibly before the student the great difference which must always exist between evolution in the lower animals and the strivings of mankind; and will in great measure take away the instinctive disgust at evolution felt by many persons of a poetic temperament. The study of environment shows immediately the great yawning gulf between the beast and the man.

We have looked thus briefly at three biological aspects of the great movement of child study. At the base of all we find evolution, and we find also that teachers and educators can do much to crystallize the heterogeneous mass of observations by studying them from the evolutionary point of view. Mental evolution is to receive great aid from the study of the contents of children's minds at different periods of growth. The great mystery of hereditary tendencies is to be fathomed and its deleterious effects modified and its blessing intensified. Lastly, the environment of the child is to receive attention as being the greatest modifying influence of the effects of heredity. The task of the student of children thus assumes a breadth and catholicity which enables it to be entered into by any teacher or educator. The results of all this we will leave to the future. Here and now we feel its widespread influence and it will be strange, indeed, if the effects of this great awakening are not felt throughout succeeding ages.

GEOGRAPHIC INTERESTS OF CHILDREN.

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AN effort has been made, by means of tests, to determine the geographic interests of children. Prof. Will S. Monroe gave the following test to 4057 children; 2002 boys and 2053 girls, from eastern and western Massachusetts. "If you could visit some place, tell what place you would like most to visit and why you wish to visit that particular place."

There was shown a marked interest in cities and towns — especially by the younger children; probably because the city is more concrete — is a smaller unit, and the child mind can grasp it more easily. A city or town was preferred by 1,878 children. A strong local interest was shown. The larger number of cities named were those about which the children hear frequently. New York was chosen by 355, making it head the list. Second, came Boston, chosen by 285; 199 preferred Washington; 130 Paris; 88 Rome, and 72, London. Over 300 gave other towns in Massachusetts, and about the same number other cities in the United States. The interest in foreign cities was stronger with the older children.

The next strongest interest was in states and countries; 1,403 would like to visit some state or country. This interest increased as the children grew older. Of the states, California led, selected by 153; 110 wished to visit Florida; 96, Canada; next in order came England, China and Japan. Other states in the United States were named by 300, and 500 named other foreign countries.

Only 198 of the children would like to visit places of structural form, showing that the interest in oceans, lakes and mountains was not great. A desire to visit places of natural wonder was expressed by 173. Yellowstone National Park and Niagara Falls were oftenest named. This was a growing interest, but was very slight with the young children.

The real basis of the child's interest in buildings is the picture. It creates and helps to sustain interest, not only in buildings, but in customs, manners, industries and animals. Therefore, it

should hold an important place in geography. According to the Germans, "The picture speaks more eloquently than the best description we can see or hear." They improve sight-training, leading the children to obtain more from other pictures than they could possibly at first.

The motives given by the children were varied. A desire to visit the home of friends and relatives was given by 598. Travel and amusement led 318 to give particular places; 191 wanted to see the customs and manners of people; 110 would like to visit their birth place; 46 gave a religious motive; 612 named places of historic interest; 545 gave as a reason, climate, fruit or some physical form; 517 wished to see beautiful scenery; 134 wanted to see works of art. Five-sixths of the answers show a human interest, related to self, family, other people, and sometimes to history and religion, but human in some form.

Anna Buckbee gave a similar test to 600 Pennsylvania children. In nearly all particulars her results were like Professor Monroe's. The interest shown in states was similar. In both tests California led, with Florida second. But in Miss Buckbee's test, London led the list of cities. The only essential difference in motives was that a stronger religious interest was shown by the Pennsylvania children. Miss Buckbee also found that five-sixths of her answers related to a human interest. Sex seemed to make no important difference in determining the place or motive. None of the boys chose the wild lands, as was expected, but three girls named Africa, and two, Australia, because they wished to see a new country. The interest in people was much stronger than in structure.

Does not the strong human interest shown by the children lead us to unite with Miss Buckbee in asking if this does not show that the earth should be taught as the home of man? Ritter says: — "In relation to its inhabitants, crowned with the imperial gift of reason, the earth is not merely the place where men may stand, the cradle where they may sleep, the home where they may live, it is the school where they may be trained." There is a strong sympathy between the primitive man or race and the little child. The children delight in stories about the Eskimo, Hottentots and Bushmen — who in many respects show but little progress above the animals. They enjoy thinking of these people and can, in a crude way, represent their homes and implements.

According to some theories "the child began where primitive man began, feels as he felt, advances as he advanced, only with more rapid strides." If we follow the development of races with regard to making homes, we shall find that people who show almost no progress in civilization live simply beneath the trees; those who have advanced a little fasten several branches together and thus live in the trees. Races in the third stage of civilization cut several branches from trees, bind them together at the top, spread the base into a circle, then cover with boughs or skins — this is really the first shelter that can be called a hut. Some of these people live in caves and the most civilized have wooden houses richly decorated — the first attempt at a permanent habitation.

In a way, this may be compared to the child in his development, and nearly every child is interested in studying these habitations. At first, the child is satisfied with the slightest thing to which his imagination can give the name "house," but, as he develops, he needs something more and more suggestive of the house before he likes to play that it is one.

One aim in the study of geography should be to develop a love for fellow beings. The children may be led, as Jane Andrews led them in her fairy tale of geography, to see that they are really brothers and sisters to these little people who live all over the world. Brothers, whether they live in cold or warm regions, because they are all the children of the one, kind heavenly Father, who cares for them all and gives each food and clothes according to his need. The children should be taught about the little child of the desert — her home, food, clothes, school, play-things, how she is kept warm, how she obtains her food, clothes, spends her days and nights, travels, the kind of animals she has and their use. In the same way the other of the "Seven Little Sisters," the Brown Baby, Eskimo girl, Child of the River Rhine, the Swiss, African, and Chinese boys and girls.

By means of stories and pictures these lessons may become so real that the children will seem to be on the desert playing in the sand or riding on the camel. Again, they may be traveling over ice-fields with the Eskimo girl, swinging in the wooden cradle of the "Lapland Girl," or may be shooting arrows with the Indian boy. Frye says: — "To know and to think of these little people is to learn to love them." Not only because the children are so

much interested in these people should they be studied, but this knowledge which they receive, is the basis of the race divisions. In his interest the child remembers all the characteristics of these people and, when the races are studied, he need only learn which people belong to a certain race.

Such literature as Longfellow's Hiawatha has a greater interest and deeper meaning to the child that knows the habits and customs of the people. The German children are carefully taught about the primitive people and they know more about our American Indians than many American people do. Many historic facts imply a knowledge of primitive people, because

> "All are but parts of one stupendous whole,
> Whose body nature is, and God the soul."

The old-fashioned method of teaching geography was really mechanical and unfruitful. Two or three years after the child finished the study he knew comparatively little of geography. One writer says that when matters of minor importance are excluded and superseded by valuable ideas, it becomes, perhaps, the broadest, as well as the most interesting, in the entire list of studies. What children used to learn was largely confined to location of places, boundaries, names of states and countries, their capitals, length of rivers, heights of mountains, imports, exports, capes and peninsulas. To a large extent, these facts belong to works of reference. Instead of requiring the child to learn them, he may be taught where to find such details, if he ever needed to know about them.

There are two reasons why the children so soon forgot the facts which they had learned. First — the child mind is not so constructed as to be able to retain so many unimportant facts. Second — we remember only those things which interest us, and ordinary dry facts have little interest for the child. Besides these reasons, the children could have learned something which would have been of greater service to them in later life.

But a thing should not be taught for the thing itself but for what is beyond. Humboldt says: — "Every little nook and shaded corner is but a reflection of the whole of nature." When the brook basin is taught it should not be simply, that the child may know about it, but that, when he learns of such basins as the Mississippi, he will have something with which to compare

the larger one in all its details. Then it is that the great parts of nature mean something to him.

If geography is taught according to the child's geographic interest, nearly all of the great mental powers may be developed. The memory should be exercised by using it, that it may develop, but should not be overtaxed. Instead of learning the unimportant details about each state and country, take his own as a standard and compare others with it.

Through the study of geography the imagination may be trained. It has been found that the child who can best picture the pretty fairy stories makes the best scholar. To train the imagination in making such pictures, give short and interesting geography stories at first. As the children grow older, lengthen and make them less interesting. A very fine description of such mountains as the Alps or Andes may mean little or nothing to the child. But if he has seen a small mountain or pictures of several, he will compare the description with his mental picture of the smaller, and his imagination gives him a picture of the loftier height. It is by means of imagination that the child travels to far-off countries.

To a very large degree, geography may develop the reasoning powers. It is much more important that a child know what made a city populous, than to know its population; to know why a river is long than to know its length. He develops his reason when he decides why one place yields corn, another, cotton; why in one part of a country mining is the leading occupation, in another, agriculture, and in still another, manufacture. From Robinson Crusoe the child sees how difficult it was to get the necessities of life without the aid of civilized means. He reasons out why it is necessary to work for food and clothes. It should be the child's reason that tells him why certain races have developed more than others. Why the climate, soil and position of Europe have made it at the head of civilization for so long a period.

In determining the effect that commerce, language and writing have had on civilization, the effect of mountains, valleys, rivers and the ocean in developing the race, the child's reason should be his guide. In comparing one thing with another, he is developing his judgment. If Europe and North America are compared, it will be his judgment that decides which is larger, more mountainous, has greater water power, is best suited for the home of man.

The emotions may be trained in various ways through the same study. We found that there was quite an interest in natural wonders, especially with the older children. The aesthetic emotions may be developed by teaching about such natural wonders as Yellowstone National Park and Niagara Falls. Make the grand and beautiful parts the most impressive. The children can develop the altruistic emotions when they learn to love the little people of other lands, and learn to respect the religion of all people, however different from their own. The understanding of commerce and the intercourse between different countries will develop the altruistic emotions, making the children broad in their thoughts and sympathies.

Frye says that the study of geography begins when the senses are awakened to nature. The child is very early taught the simple lessons from nature. He is soon interested in nature stories and it is the teachers's work to broaden and deepen this interest. Training the observing powers is about the first work with the little child. He takes great delight in trying to represent what he has seen and every time the child tries to express himself he is led to observe more closely.

The children should first study the play-ground or school-yard, and represent what they have seen, understanding every part. Then take the village or town, represent it, and from that map lead to the map of the state and country. Let the formation of the islands suggest to the children the broken coast line. Make the ideas concerning geography, which the child receives, more impressive by associating them with other studies. Geography is full of natural science and without man as the center nature would have little interest to the geographer. History should go hand in hand with it. "The study of geography with man as the central figure reaches upward to the throne of Omnipotence, downward to the rippling rill."

THE STATE UNIVERSITY IDEAL.

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THE present writer expected to see the strictures on Western university ideals, which appeared in the October number of EDUCATION, answered in the next issue by some Western educator. This sort of article, however, is not at all new. It appears every now and then from the pen of some New England grammar school teacher who is itching for promotion. It is as popular a theme with the average Easterner, as a libel on Great Britain is with many Americans. The older educators of the West have long since ceased to notice such remarks, but it may be rational for the writer, who is a graduate of one of the largest Eastern universities and who was an instructor and professor for seven years in his *alma mater* and in a New England college, to deny some of the grosser misstatements in the article.

Mr. Bicknell seems to show in many instances a lamentable ignorance of facts and in other cases a marked perversion of data. One would gather from his article that the time of students in Western universities was given over largely to athletics, while their Eastern brethren consumed all their spare hours in preparing for debates and other intellectual pursuits.

As a matter of fact, it is well known that athletics is an epidemic throughout the college world, and that the East is more infected than the West. The attorney-general of Mr. Bicknell's own state, for instance, has repeatedly declared that athletics is the most valuable part of a college course. President Andrews is reported by the newspapers as saying that foot ball is a more beneficial exercise and a greater developer of manhood than anything else with which he is acquainted, and the writer has himself seen Harvard Professors and instructors show the wildest joy over a victory in the same barbarous game.

Moreover, until 1890, very little attention was paid to athletics in Western universities. Since that time the contagion has spread from the East and is now at its height. During the last three years a much greater interest has been taken in athletics,

but neither now nor at any former time has it absorbed so much of the student's time, attention, or money, as it always has in the East. Athletics in the West has been and still is only a pastime and has always been under the control of the college faculties. The athletic associations of Western universities do not have men in their employ to watch at fitting schools for available material and to offer financial inducements to muscular young men to come to certain institutions. Can Harvard, Yale, Princeton, or Brown say as much?

In some cases a "coach" has been hired in the West, but his position corresponds neither in salary nor importance to that of the trainers in Eastern colleges. The instance of a Western college paying $1200 to an athletic instructor and only $700 to an assistant professor is simply a matter of supply and demand. We happen to have more men in the United States that can teach the intellect properly than can rightly train the body. But this disproportion in salary is not confined to the West. It is currently reported, and may reasonably be true, that the gymnasium instructor of Wellesley receives not only more than an assistant professor, but more than the president. It is a fact, at any rate, that a certain man with a German doctorate, a splendid record for scholarship and teaching, an assistant at Johns Hopkins, and with no blemish of character, failed to obtain an absolutely unsalaried place in the teaching force at Harvard, while, presumably, Doctor Sargent commands a large income there, and "coaches" are paid as high as $200 a week during the foot ball season.

Until recently, the interest of students in the Western institutions has been centered on the inter-collegiate contests in oratory. From the local contest to the inter-state the successful speakers were followed by the popular interest and student enthusiasm that in Eastern colleges at that time were aroused only by athletics. The value of this training has been shown so plainly in the number and ability of the public speakers of the West that these inter-collegiate contests in oratory are now being introduced by the authorities into Eastern colleges but without securing that place in the hearts of the students that they hold in the West.

Mr. Bicknell speaks of Western boards of trustees as if they were largely illiterate, who had accepted the place merely for its political influence. He seems to attribute this to the fact that there is no salary attached to the position, but the writer has yet

to learn of any board of trustees that is paid. In fact, it has always been claimed that this was the surest way of securing good men and keeping the board free from mere politicians. As regards the education of these officers in the West, the writer would say that five of the nine trustees of the State University of Wyoming, with which he is best acquainted, are college bred, and that the rest have had at least a fair academic course and have shown marked business ability. This percentage of education is at least equal to that of either of the Eastern colleges with which the writer was conneeted.

Even if party affiliations were the only reason in appointing trustees for the state universities, which is seldom the case, it would be a more liberal plan than that the Board should be necessarily of one particular sect, or worse, that all, or at least a majority, should be clergymen of a certain sect of a single state, as in the case of one of our Eastern universities. According to the experience of those who have taught in both parts of the country, the policy of Western trustees is in general broader and decidedly less arbitrary than that of Eastern boards.

In regard to the more important question of freedom of teaching, there is no doubt that the state universities have attained this necessary condition of higher education to as great a degree as any other institutions in the world, with the possible exception of the similarly situated Swiss universities. So far from interfering with the political views of the professors, we have the case of a Western state which has given eighty thousand majority for protection keeping an eloquent free trader in the chair of political economy, and we know of professors of sociology in Western states advocating state ownership of many branches of business, while the public sentiment of the state is violently opposed to anything approaching socialism.

The several cases of scandalous dismissal of professors for political reasons, which have aroused public indignation of late, have not been in state universities nor very far West. On the other hand, the best known professor of political economy in the United States is understood to have left his comfortable berth in an Eastern institution for the freedom of a Western university, simply because his teachings gave offense to one of the wealthy patrons of the former institution.

Not satisfied with his aspersion of the trustees, Mr. Bicknell states further that the president of the Western state university

is "too often a man of meagre attainments and ideals dictated chiefly by personal vanity and a desire for personal aggrandizement." Scarcely any statement could be more unqualifiedly untrue. The presidents of state universities, with only one exception, are not only graduates of the best Eastern colleges, but have in most cases attained the doctorate of philosophy at German universities or at the first-class institutions of this country. Fully three-fourths of them have been honored with the doctorate in laws by colleges of standing. The one unfortunate case of a president not college bred which Mr. Bicknell would make the rule, is exceptional, and such errors occur also in the East.

The college in which the writer last taught was one of the best in New England, and yet of its three presidents only one was a college graduate. The other two in this case made good executives, but only too frequently the pretentious D. D. has covered a multitude of ignorance.

Two years ago the writer represented an Eastern college at a meeting made up mostly of New England college presidents. This last summer he was fortunate enough to be present at a similar meeting in Milwaukee where the presidents of the state universities composed the body of attendance. A comparison was natural. The Western men seemed fully equal to the New Englanders in culture, scholarship and eloquence, and rather superior, if anything, in progressiveness of ideas. Be this as it may, to speak of men like Angell, Adams, Northrup, Jesse, Canfield, Draper, Schaeffer, Baker, Snow and McLain as men "of meagre attainments and ideals," after seeing or hearing them, would be as ridiculous as to say the same thing of Eliot, Low, Yates, Dwight, Warren and Andrews. A writer who indulges in any such extravagance shows that he is entirely unacquainted with the facts.

Is it necessary to say anything further about the educational ideals of state universities? There is but a single conclusion for one who has examined the matter, and such one would also have a very definite opinion concerning the extent of Mr. Bicknell's knowledge and judgment. If that gentleman read as well as wrote, he would have discovered in a recent journal of education, the testimony of an ex-instructor of Harvard, who found higher ideals and higher standards in the University of Nebraska than he did at Harvard, and he would also learn that of the eleven institutions recognized in Germany, five are state universities.

EDITORIAL.

THE recent publication of a volume in the well-know International Education Series, edited by Dr. Wm. T. Harris, devoted exclusively to the Bibliography of Education, calls attention anew to the place and value of the great profession of pedagogy. A great army of earnest men and women throughout the country are engaged in developing the best theories and practically applying the best methods of training the young for citizenship in the kingdoms of earth and the Kingdom of Heaven. Out of their labors a great literature is springing into being, destined ultimately to equal or surpass that relating to the other great subjects of human interest such as theology, medicine, law, etc. Teaching has ceased to be a mere make-shift to earn a living and has become one of the leading professions, calling for the devotion of the highest powers of the best thinkers and the life-labors of some of our most brilliant minds. This is still unappreciated by many, and too many teachers are plodding along in a dreary, routine performance of their daily duties, wholly unawakened to the inspiration of their calling. Teaching should be a "calling" and no one should enter it, any more than any one should enter the ministry, without a distinct "call." Its realm is distinctively spiritual and it is the finest of the fine arts. The consequences of blundering and of generally poor work and incompetency are of infinite importance. The value of ability and proficiency is inestimable and should command the highest reward in hard cash as well as in honor and the appreciation of humanity. The conditions should be such as to invite the dedication of the very ablest minds to the great profession of teaching.

THE magazine EDUCATION has always stood for these things, and in its long career has done much to awaken enthusiasm among educators and to inform the public in regard to the growth of the educational spirit and the development of the profession of pedagogy. Its bound volumes cover the educational history of the past seventeen years, the entire period of the modern development of teaching as a profession. Their pages are packed full of matter of the greatest importance and interest to students of the subject. It has always been the policy of its editors to make the entire contents strictly original, and the foremost educators of the land have steadily contributed their best things to EDUCATION. Appreciating these facts a large number of

the leading college, normal school, state and city libraries of the country have secured sets of the bound volumes of the magazine, until now the supply is nearly exhausted. The publishers can still supply a very limited number but it will soon be impossible to obtain the earlier volumes at any price. In the book on the Bibliograph of Education above referred to, the author, Professor Will S. Monroe, justly gives an important place to educational periodicals, historical and current, as they have had a large share in the work of promoting the highest interests of the profession.

MASSACHUSETTS has an enviable reputation as a leader in educational reforms, and she again comes to the front with a plan for the better care of truant and neglected children. The truant problem is a complicated and difficult one. It has never been satisfactorily solved. Perhaps it never will be. But a step at least, in the right direction, has been taken by the old Bay State which will be watched by our readers with great interest. On June 7th, Governor Wolcott approved a resolve directing the State Board of Education to report to the Legislature of 1896, before the second day of January, a plan for carrying out the recommendations which were submitted to the Legislature of 1897 on this subject. A plan has been worked out and put into three bills which have been submitted to the several members of the Board for careful consideration. When the suggestions of the Board are received and embodied in the bills they will be ready for transmission to the Legislature. The position is taken that the truant, neglected and criminal children of the state have on the whole been more sinned against than sinning. They suffer from bad conditions at home, from a tainted moral atmosphere, from lack of training in regular habits of mind and body, from vicious and incompetent parental influences. A serious attempt is to be made to remedy these defects of environment by the establishment of a number of institutions which are to be called "State Parental Schools." There are at present about 340 children in the five truant schools of the state outside of the one at Jamaica Plain in the Boston district. But there are at least 1,200 children who are thought to be proper subjects for them. It is proposed to have at least four parental schools, seven trustees, appointed by the governor with the consent of the council, will have charge of them. At least two of the trustees are to be women. Their term of office is to be five years. The trustees are to be a corporate body capable of receiving and holding gifts which may be made for the use of such schools. They are to elect a superintendent for each of said schools, to serve during the pleasure of the trustees, who will fix his compensation, subject to

approval by the governor and council. These schools shall not be located near any penal institution, but any existing truant school may be taken for a parental school at the option of the trustees. They shall be subject to visitation by the State Board of Lunacy and Charity and by the Board of Education, which must each make an annual report on their work and condition to the legislature. Into these schools are to be gathered three classes of offenders; viz., "truants," who are defined as "every child between seven and fourteen years and every child between fourteen and seventeen, in addition, who cannot read at sight and write legibly simple sentences in English, who wilfully and habitually absents himself from the public schools;" (2) "habitual absentees," including every child between seven and seventeen who may be found wandering about in the streets or public places of any town or city with no lawful occupation or business, habitually not attending school and growing up in ignorance; (3) "habitual school offenders," including every child who is required to attend school and does attend, but who persistently violates the reasonable rules and regulations of the school which he attends, or otherwise persistently misbehaves therein, so as to render him a fit subject for exclusion therefrom." In order to give time for the reformation of children committed to these schools it is provided that if they are under thirteen when committed they shall remain until they are fifteen. If over thirteen their commitment shall be for two years. To encourage good behavior the court or magistrate who convicted the child is given power to release him on probation under the oversight of a school attendance office. Under certain conditions they may be put out under proper supervision into families selected and approved by the trustees. Ample provision is made for the daily instruction to be given in these schools and an earnest effort is to be made to make them successful in a high degree. The plan is an elaborate and carefully worked out scheme for the proper care and training of a dangerous and mischievous class of children and we hope and believe that it will be found to work so well as to commend itself to educational authorities of other commonwealths.

THE following figures and statements concerning the numbers and classification of membership in the National Educational Association, taken at the Milwaukee meeting, last July, are very interesting. The total active membership was, it seems, 901: (421 new and 480 old); the associates numbered 5,231; a grand total of 6,132. Of this membership 652 active and 4,254 associates belonged to the North Central Division; or exactly 80 per cent. of all. The North Atlantic

furnished a total of 569; the South Central, 260; the Western, 272; the South Atlantic, 119, and Foreign, 10. The New England States made a poor showing; Maine furnished but five active or associate members; New Hampshire, seven; Vermont, 12; Connecticut, 13; Rhode Island, 14; Massachusetts, 84. Of course, if the meeting had been held at some nearer point New England would have been far better represented. And the successful meeting at Montreal probably kept away a good many, but after all there is a good deal of room left for reflection for educators living in this part of our country.

PRESIDENT GILMAN, of Johns Hopkins University, in his address at the fiftieth anniversary of the Sheffield Scientific School recently, said that the greatest achievements of the human intellect in the past fifty years were: The establishment of the principle of evolution; the establishment of the principles of the conservation of energy; the development of mathematical science and its applications to physics, mechanics, electricity and astronomy; the development of spectrum analysis and the consequent discoveries respecting light and electricity; and the discovery of the nature and functions of bacteria and of their influence for weal or woe upon living organisms. We should be inclined to add the discovery and application of true methods of education, whereby the young are made ready for the benefits of all the above discoveries and trained to perpetuate the knowledge of them.

There is no book in all the world which can stand a comparison with the Bible. No book is so widely read. No book has been translated into so many dialects and languages. What an immense number of editions of the Bible have been placed before the English-speaking people during the last four hundred, yes during the last forty years! Our people read the Bible. It is not necessary to go into churches and Sunday schools, or even homes, to learn this fact. Ask booksellers how the sales of Bibles compare with the sales of some well known work and we venture to say you will be surprised by their answers. If the Bible is not to be read daily, as we wish it might be, in all our schools—for its moral and educational value, if on no other grounds — it certainly should be studied in the home. And the firm which can furnish the choicest edition of the Bible at the lowest price is a public benefactor. Such a case recently came to our attention and we hastened to make such arrangements as will place before our readers, for a very small sum, a volume worthy in type, paper, binding and illustration of its divinely inspired text. Here is a beautiful Oxford Teachers' Bible,

with full concordance, large-paged, flexible covers, all gilt edges and with *eight hundred* fine engravings. It is a book of which the whole family will be proud. And we can offer this splendid Bible, which is well worth $15.00, by itself, to our subscribers and also a year's subscription to EDUCATION for only *six dollars*. This offer is made to any subscriber, *new* or *old*. This is by far the best value we have ever seen offered, in the book line. We feel that we are doing our subscribers and their friends a real favor which they will appreciate as soon as they see this Bible. It is made at the famous Riverside Press, in Cambridge. We give particulars on another page.—EDS. EDUCATION.

FOREIGN NOTES.

UNIVERSITY MOVEMENTS.

One of the most important movements of the time is that for establishing and strengthening relations between the University students of different nations. The universities of the Middle ages were essentially international, but this character was gradually lost through the multiplication of rival institutions and the hatreds engendered by war. In our own day German universities have engaged the attention of the world by the fame of their professors and their unequalled equipments. Berlin has become the Mecca of would be *savants*. Switzerland also presents irresistible attractions in the prestige of her scientific faculties and the liberal spirit in which foreign students are received. Lausanne with commendable foresight organized its university with especial reference to foreign patronage and had the satisfaction of enrolling from 1874 to 1895 a total of 8,000 foreigners or an average of 400 a year. In the total given were included 2,259 Germans, 309 Americans, 780 Bulgarians, 1,332 Roumanians. France has not seen the stream of youthful enthusiasts pass her by unmoved, and during the last five years the government and university professors have exerted themselves to make the rich resources of their institutions accesssible to foreigners. The measures that have been adopted to this end so far as they affect students of our own country have been explained from time to time in these columns. Briefly summed up they are the admission of American students to the French universities as candidates for the doctors' degree upon the basis of their college diplomas; the privilege of taking the final examinations either separately or "en bloc"; and the creation of a special university degree for foreigners which is a guarantee of scholastic attainment but does not carry any professional privileges. The Franco-American committee at Paris that has had this movement in charge has been ably supplemented by an American committee under the presidency of Dr. Simon Newcomb.

The revival of old sympathies between the universities of Edinburgh and Paris is an interesting feature of the general movement. The comfort of foreign students who go to pursue their studies in France is

greatly promoted by the "Committee of patronage of foreign students" which has an American section and a Scotch section. Paris is the seat of the committee but it has branches in all the French universities. At the annual reunion of 1896 the Scotch delegates were the recipients of marked attentions which they acknowledged afterward in a very complimentary letter. As a consequence of the good will thus excited, the Scotch committee has received important additions to its membership among these being named specially the Duke of Fife, the Marquis of Lothian, Lord Kelvin, the Rectors of the Scotch universities, and Sir Archibald Geikie. This committee has raised several scholarship funds for the support of Scotch students in France. The "Committee of Patronage" not only endeavors to find suitable homes for foreign students, but seeks in many other ways to promote their social and intellectual advantage. Especially helpful are the courses in the French language maintained by members of the committee. By means of these the foreign student secures for a small fee the benefit of special lessons and practical exercises. The efforts of the committee have extended even to Japan where a branch has been formed with the special object of attracting Japanese students to France and insuring their comfort in the strange land. Similar efforts are in progress in China and the committee report that a company of students will be sent from Pekin to Paris.

EDUCATION IN MEXICO.

The interest felt in our relations with other American countries is indicated by the great demand for the "Commercial Directory" just published by the Bureau of American Republics, a document presenting fully the nature and extent of our commercial interchange with these countries. The Bureau of Education, which is doing a great work in setting forth clearly and fully the educational status of other countries, has not neglected those so recently brought into close affiliation with ourselves. The report of the Bureau just issued has a valuable chapter on "Education in Mexico and Central America," from the pen of Mr. F. F. Hilder. In Mexico popular education has engaged the attention of the government ever since the overthrow of the Spanish power but actual progress in this respect has been slow and inconstant. The law of 1891 ushered in a new era and a system of schools is being extended throughout the country. Under this law primary instruction is free and obligatory for all children from six to twelve years of age. The local authorities have charge of the public schools which are supported by local taxes and Federal appropriations.

Committees have been formed in the municipalities of the Federal district and the territories to see that the law is complied with in respect to compulsory education. In the states, and particularly the less populous ones, and where the Indians predominate, compulsory attendance, although recognized by law, cannot yet be enforced. The extension of education among the rural population and the more remote communities is a problem that only time can solve. The government has also organized many superior and technical schools. Among these are the National College of Engineers and Mining, The Medical College, The

National Medical Institute, National College of Agriculture and Veterinary Surgery, National School of Arts and Trades for Men, a similar school for women and National Schools of Art and Music. The blind and deaf and dumb are also provided with special schools. The National library contains about 170,000 volumes. Literary and scientific societies are fostered by the government.

The executive, being determined to spare no effort nor expense which might redound to the honor of the nation and the advantage of its studious youth, has created an "anatomia-pathological museum," with the double purpose of furnishing a new and efficient element of instruction to the school of medicine and also for the purpose of appreciating worthily the scientific labors which were presented to the second Pan-American Congress that met in the capital in 1896.

According to the latest statistics obtainable there were in the Republic about 8,000 public schools for primary education, the number of scholars enrolled about 500,000, and the amount appropriated by the government for educational purposes about $3,500,000 per annum. In the Federal district there were sixty-two private schools in which the pupils paid for their education, and 113 public schools for primary education. In the private schools there were 10,355 pupils, and in the public schools 21,159 pupils were enrolled.

ENGLISH REPORT ON TECHNICAL EDUCATION IN GERMANY.

The recent efforts for the promotion of technical instruction in England have been noted in these columns. Interest in this subject is intensified by the growing conviction that England cannot maintain her commercial supremacy against Germany unless her artisan class and the directors of her technical industries have equal advantages with those of her rival. The enormous strides recently made by Germany in the control of foreign trade have indeed excited the attention of the world and it is to Germany that England turns for example and inspiration in respect to the training that is at the foundation of this success. The city of Manchester has been foremost among English municipalities in inquiries of this nature. In 1891 a deputation was sent to Germany by the Manchester City Council to investigate the principal technical schools of Germany and a second similar commission has just made a tour of inspection over the same ground. The report of the commission recently published emphasizes the striking developments that have taken place since 1891. As to the general state of the country they say "That Germany is in a prosperous condition, due to her successful manufacturing and commercial enterprise, was plainly evident on every hand in the extension of her cities, the making of new streets, and the erection of fine, handsome buildings which is going on everywhere in her large towns."

"It is not less clear that the schools are the root and base of this surprising industrial development, and are the main contributors to this great economic result; it is no less certain that if we are to maintain our position as a great industrial community, it must be by following and adopting the same methods."

"It is not, however, only in the domain of science that Germany is making great progress. In almost every town visited by the deputation

fine industrial art museums were found, arranged with the express purpose of cultivating a knowledge of what has already been accomplished in the production of fine examples of color, design and workmanship. Every technical school has its museum of objects applicable to its purposes."

"Notably was this the case in Berlin, Vienna, Nuremberg, Crefeld and at Dusseldorf, in which latter place the Industrial Art Museum is said to be the finest in the Rhine land."

"These museums help to preserve and hand down the traditions of past achievement and excellence, and stimulate the desire to reach as high, or higher levels to-day."

The commissioners observe also that, "The comparatively advanced age of the day students in German Technical Schools is especially remarkable as showing (1st) the relative position of technical schools with respect to general education on the Continent and in England; (2nd) the standard of attainment reached before entering upon specialized studies; and, lastly, as indicating the advance which is possible under such circumstances."

"No doubt the economic and industrial features of German manufacturing life, and social and political circumstances favor these exceptional conditions, and especially are they helped by the facilities which the students enjoy of entering at a late age government railway and other state works."

Among particular institutions described in the report is the Technical High School of Darmstadt which was rebuilt in 1895 at a cost of $650,000.

"The school includes in addition to the main building, and opposite to it, two fine buildings — one for physics and technical electricity, and the other for pure chemistry, electro-chemistry, chemical technology and pharmacy. This Technical High School is an institution of university rank, and is built on a scale of great liberality." A. T. S.

AMONG THE BOOKS.

To accommodate readers who may wish it, the publishers of EDUCATION will send, post paid on receipt of the price, any book reviewed in these columns.

BIBLIOGRAPHY OF EDUCATION, by Prof. Will S. Monroe of the State Normal School at Westfield, is a long needed and most useful book. It is the latest addition to the International Education series of books edited by Dr. Wm. T. Harris. In an admirable introduction Dr. Harris says of this book, after pointing out that it would be impossible in one volume to call attention to text-books and catalogues, "It will be of especial value to librarians in the way of assisting them to answer two questions: (a) What books has this library on any special educational theme? (b) What books ought it to obtain to complete its collection in that theme?" Our author gives us an idea of the great and rapidly growing "literature of education" by citing a Pedagogical library in Leipzig with 66,604 books and pamphlets, one in Paris with 50,000 books and the Bureau of Education at Washington with over 50,000 books and 150,000 pamphlets on education or subjects allied thereto. Mr. Monroe has been working along this line for sixteen years and in these 202 pages are catalogued 3,200 books and pamphlets mostly in the English language and his labors will prove of great benefit to every thoughtful educator. The book is admirably classified and fully indexed. New York: D. Appleton & Co.

THE ENCYCLOPEDIA OF SOCIAL REFORM. Edited by W. D. P. Bliss, with the coöperation of many distinguished specialists. This is a great book, in every sense of the word. It is published in one large volume containing nearly 1,500 pages, two columns to a page. The editor has been assisted in its compilation by such eminent authorities as President E. B. Andrews, Edward Atkinson, Professor E. W. Bemis, Edward Bellamy, Rev. S. W. Dike, Rev. E. E. Hale, Lady Henry Somerset, Carroll D. Wright, and many others. The subject of Sociology is one of the highest subjects of human interest. It has risen to the position of a profession and has developed a literature which is rapidly becoming volumnious. This is the first attempt which we are acquainted with to give a complete compendium of authors, literature, history, in short of everything relating to the subjects of Sociology and Political Economy. It is a successful attempt. The scholar, the pastor, the busy man of affairs, the editor or reporter, called upon to write, deliberately or hurriedly, on any branch of these important subjects, will find here the freshest, clearest statements, of facts, figures, definitions and principles, arranged so as to be available without laborious and vexatious delay. Every facility for ready consultation is afforded by the cyclopedic arrangement, the extensive indexes and the black-face reference notes on nearly every page. This is a strong feature in a book of this character. There is an appendix replete with serviceable material. We have tested the book by turning to it for information which we were seeking, on several points, and in no case were we disappointed. No earnest worker for the uplifting of humanity can afford to neglect this superb volume. To all such it will be what the hammer is to the carpenter, an *indispensable tool.* New York: Funk & Wagnalls Company. Cloth, $7.50; Sheep, $9.50; Morocco, $14.00.

AROUND THE WORLD GEOGRAPHICAL READER. Book I, Primary. By Stella W. Carroll; edited by Clarence F. Carroll, Supt. of Schools, Worcester, Mass. It will not be the fault of the school-book makers if the coming generation is not "up" in geography. This science, once administered in dry and bitter doses, is now sugar-coated. By easy stages, beginning with the lowest grades, and with the accompaniments of fascinating illustration and engaging story, the young student is lured on to the acquirement of accurate information concerning the earth, its climates, productions, inhabitants, customs, etc. The present volume is admirably adapted to the comprehension of those at the threshold of the educational temple. In simple language the leading facts are told in relation to the land and life of the Eskimos, Indians, Arabs, Dutch, Chinese and Japanese. Legible text, artistic pictures and attractive covers make the book fully up to the high standard of the previous text-books issued by the publishers. Mailing price, 40 cents. The Morse Company, 96 5th Ave., New York, N. Y.

THE HALL OF SHELLS. By Mrs. A. S. Hardy. This is a truly beautiful little book, stimulating to the study of a somewhat neglected branch of natural science. Young people who have access to the sea-shore will find it a guide which will lead them to the investigation of some of the choicest secrets of nature, which are strewn along the shore or hidden away in rocky caverns exposed by the receding tide. A living interest is given to the book by the choice illustrations, almost every one of which represents a child or other human being in touch with the creatures of the shell-world. Scientifically accurate information is imparted not in a dry, dull way but by the aid of a chaste imagination and in living language. The book is published by D. Appleton & Co., New York, at 60 cents.

L. Prang & Co., of Boston, send us Christmas welcome with their exquisite booklets and lovely calendars and cards. Evangeline is a very fine calendar with six large plates and portraits in colors of characters made famous by Longfellow in his immortal poem. Quotations from "Evangeline" and a two months' calendar add effectiveness to each plate. It is the work of Frank T. Merrill and Louis K. Harlow. Sea Shore Calendar and Queenly Roses are two other lovely and artistic calendars, with six and four beautiful plates each and silk ribbons and bows. These will delight their fortunate possessors. Violet Time, by Katharine L. Connor is an exquisite collection of violets and sweet verses, tied with silk ribbon and bow. The cover is a rich violet design. Daisies Dear by Bessie Gray has choice verses on the daisy and beautiful illustrations in colors. Forget-me-not by the same author is equally lovely. My Lady Pansy is a sweet booklet; Masters in Music a unique calendar, and The Peace Flag an exquisite emblem. Then there are many pretty cards in sweet peas, pansies, holly and berries and other kinds of flowers. How much L. Prang & Co. do to brighten our American homes.

THE BOND AND THE DOLLAR. By John Clark Ridpath. This is a valuable monograph by the new editor of *The Arena*. It has had a large reading, the present edition bringing the circulation up to the one hundredth thousand. It gives a history of the so-called conspiracy of the money power against the masses. The author has a fascinating style. He has a cause to plead, the cause of the common people, and he pleads it well. His book is readable. It is issued in popular form in paper cover at 10 cents a copy. Boston: The Arena Publishing Company.

THIRD YEAR IN FRENCH, by L. C. Syms, completes the course in French which the author has put forth intending to meet the requirements of preparatory schools, academies and colleges. The plan adopted for use in the previous books is followed in this one, the lessons showing marked progression. The study of verbs, the basis of the whole method, is still given the same importance. The book contains many extracts in French and English, selections being taken from Bernardin de Saint-Pierre, Lamartine, Voltaire, Coppee, Beranger, etc., thus initiating the student into the style of classic and modern writers, and preparing them for the reading of the masterpieces of French literature. New York: American Book Company.

EXERCISES IN GREEK COMPOSITION, by Edwin H. Higley, consists of exercises based on Xenophon's Anabasis and Hellenica, with notes and vocabulary, and references to the grammars of Goodwin and Hadley-Allen. The author claims that it is of prime importance for the student of Greek to know the Attic forms of inflection, the regular constructions of syntax, and the meanings of common words, and that a knowledge of these can be best acquired by considerable work in Greek composition. The exercises he has selected are designed to furnish materials for acquiring knowledge of these three essentials, and the work is well done. The notes are brief and to the point, the vocabulary specially made for the book, the references to the grammars many and pertinent. Boston: Ginn & Co.

GEMS OF SCHOOL SONG, selected and edited by Carl Betz, Supervisor of Music, Kansas City, is a choice collection of songs for children of all ages and for schools of different grades. The songs are arranged topically and they include some of the best of the old-time favorites and some of the brightest of those of the present day. Many of the songs are those which are used in the schools of Germany and for the most part have never before been published with American words. New York: American Book Company. Price, 70 cents.

Sermon Stories for Boys and Girls. By Rev. Louis Albert Banks, D. D. Dr. Banks is well known for his racy, interesting style in sermon writing. He is particularly happy in his manner of interpreting and presenting Bible tales for younger readers. This book is one of his best and will find its way into many a young lad's or lady's Christmas stocking. No boy or girl can read it without having higher aspirations enkindled in the soul. Funk & Wagnalls Company, New York ; $1.00.

Uncle Sam's Secrets. A Story of National Affairs for the Youth of the Nation. By Oscar Phelps Austin. This is one of Appleton's Home Reading Books. In the form of an interesting story it gives the leading facts in relation to the Post Office, the Treasury, the Mint and many other institutions of the Government at Washington. It is a book which will add much to the fund of the reader's information and stimulate to further inquiry and original research. New York : D. Appleton & Company : 65 cents.

Modes of Motion, or Mechanical Conceptions of Physical Phenomena, by A. E. Dolbear of Tufts College, is intended for those who have an interest in phenomena of all kinds. It makes clear how one kind of energy is converted into another kind, and the conditions needed for transforming it. Prof. Dolbear's position in the world scientific is stable and statements from him have the attention of every physicist. In this work he has set forth the results of his further researches into the domain of matter and his conclusions are worthy the attention of every teacher and student. Boston : Lee & Shepard.

A Manual of Composition and Rhetoric, by John S. Hart, has come to us in a revised form, the revision having been made by the son of the author of the original work, Prof. James Morgan Hart, of Cornell University. This well-known book has been for years the standard text-book on the subject ; it has served its time and served it well. But the times demanded a new edition and no one was better able to make this than the illustrious head of the department of English in Cornell, Professor Hart. In the revision, part I. has been left in its original form, but part II. has been entirely rewritten, the subject of Invention being wholly new and up to date. When composition is taught in the schools with this manual as a guide, the results will justify the teacher's efforts, for the book is in hearty accord with the views and teachings of the leading educators of the day, and with the spirit of pedagogical progress in this branch of study. It is a manual without a superior. Philadelphia: Eidredge & Bro.

Syllabus of Lectures on European History, by Andrew Stephenson, Professor of History in DePauw University, is a manual for use in classes studying European history by the laboratory method. In the introduction, Doctor Stephenson outlines his general method of procedure, gives his reasons for following the method, and furnishes many suggestions for the right way to study history. He uses three instrumentalities in his teaching: base-books, lectures, and collateral readings, and the fullest information is given for the student and teacher to aid in making use of these. The syllabus is divided into four parts: Imperialism, Feudalism, Papalism, Nationalism, and under each heading there is given strong outlines of the various topics to be studied. The method has the merit of being practical, usable and comprehensible. It will give abundant help to the student at just the right place; it will stimulate him to wider reading and deeper research. Terre Haute, Ind.: The Inland Publishing Company. Price, $1.50.

THE ADVANCED MUSIC READER, by Frederic H. Ripley and Thomas Tapper, completes the Natural Course in Music, and is adapted for use in high schools, normal schools, choral societies and the home circle. The book is a quarto of 320 pages, of excellent type and paper. The selections are for the most part new, the melodies being full of life and power, the words of the highest literary merit. Many solfeggios are given throughout the book, and in these the bass part is developed, to be used independently or in duplicate. It is a notable work and well crowns a magnificent undertaking admirably executed. New York: American Book Company.

THE TREATMENT OF NATURE IN DANTE'S "DIVINA COMMEDIA." By L. Oscar Kuhns. The author of this volume has attempted to give a complete picture of all those aspects of animate and inanimate Nature which Dante has made use of in the great work named. By Nature the author means that which is objective to man, who is not himself, in this view, included in the list of objects to be studied. The book is a careful and discriminating presentation of a difficult literary subject, and is throughout readable and interesting. It shows us Dante's conception of Nature, atmospheric phenomena, flora, fauna, the Heavenly Bodies, etc. It thus throws light on the history of scientific research and is a good example of the painstaking modern method of carefully specialized study. Edward Arnold: London and New York.

Book II. of the Knickerbocker Series of SCHOOL SONGS, edited by F. E. Howard, contains twenty-three two part songs of moderate difficulty, for intermediate grades of public and private schools. The songs are all classical, full of melody, with most excellent words. The school is rich that has this supplementary song book. New York: Novello, Ewer & Co.

GRADUATE COURSES, 1897–98, is a handbook for graduate students and contains announcements of advanced courses of instruction offered by twenty-three colleges and universities of the United States, with valuable additional information. It also contains an extended abstract of the proceedings of the last convention of the Federation. It is the official organ of the Federation of Graduate clubs. New York: The Macmillan Company.

We acknowledge from C. A. W. Crosby & Son, Boston, an artistic booklet called the Colonial Book of the Towle Mfg. Co. From E. L. Kellogg & Co., New York, we have received a large, fine group portrait of All the Presidents. It is well worth the price, 25c. The *New York Observer* sends out a choice portrait of Christ's triumphal entry into Jerusalem. It is very life like.

HOW TO SEE THE POINT and Place it, by John G. Scott, is a pamphlet of forty pages crammed to the covers with useful hints and accurate information on the troublesome subject of punctuation. The author knows the subject from A to Izzard, and his rules are so clearly and succinctly put that the veriest tyro cannot go astray when using them, while the veteran writer will find the booklet a *vade mecum*. Laconic Publishing Company, 123 Liberty St., New York.

From Hinds & Noble, Cooper Institute, New York, we have two books recently added to the University Tutorial Series, EUCLID, books I–IV, by Rupert Deakin, and TUTORIAL TRIGONOMETRY, by William Briggs and G. H. Bryan. Each of these text-books is an excellent specimen of the kind of schoolbooks English authors and publishers put forth. They are characterized by thoroughness, comprehensiveness, accuracy and lucidity. Few American text-books surpass them in these respects.

To the Silver Series of English Classics has been added De Quincey's REVOLT OF THE TARTARS, edited with introduction and notes by Alexander S. Twombly. This is a graphic and notable example of the art of narration, exhibiting the character and quality of this department of literary style. The editor's introduction deals at some length with this form of composition and shows clearly the principles and rules governing it. The notes while few are critical and helpful. Boston: Silver, Burdett & Company.

ON PLYMOUTH ROCK is a very readable little book by Col. Samuel Adams Drake, author of "Watch Fires of '76," etc. He graphically describes the first settling of New England and the struggles and successes of the Plymouth Colony. To tell of their heroism is a congenial task and he does it full justice. The daily life of our sturdy forefathers is skillfully set forth. It is a thrilling story of earnest labor and great suffering and heroic continuance in well doing. Boston: Lee & Shepard. Price, 60 cents.

The introductory number in the Series of Physiological Methods of Teaching and Studying Languages is FIRST FACTS AND SENTENCES IN FRENCH, by Victor Bétis and Howard Swan. It consists of a collection of simple scenes described in easy language for the use of beginners, and forming an introduction to the authors' larger work, "Facts of Life." The book is intended for class use in teaching the current idiomatic French phraseology of ordinary life and can be used with children of from seven to fourteen years of age. It is based on the principles underlying the other works by the same authors and is one of the best of methods for learning the French language. Imported by Charles Scribner's Sons, New York.

MANHATTAN: HISTORIC AND ARTISTIC, by Cynthia M. Westover Alden, is a six-day tour guide book for Greater New York, and is a handy, serviceable, thoroughly up to date little book for sight seers in the Metropolis of America. Visitors are told how to follow routes covering twelve half days, with an extra day in Brooklyn. Maps are furnished on which each route is plainly marked, and the directions accompanying each description and route are so clear and plain that mistakes seem impossible. Every needed information is set forth; all the visitor has to do is to do as the book says and in six days he will know New York better than does a New Yorker. The book is the Badaeker for New York. New York: The Morse Company.

'ROUND THE YEAR IN MYTH AND SONG, by Florence Holbrook, is intended as a reading book for the third and fourth grades in school and for the family circle. The myths are told in a most interesting manner, they will serve to awaken the child's imagination and furnish a key to many beautiful things in literature and art which will prove an unfailing source of delight in after life. The poetical selections are arranged to celebrate the seasons and the months, and every selection is an exquisite gem. It is a charming book for the school and the home. New York: American Book Company.

FRENCH PRACTICAL COURSE, by Jules Magnenat, of the State University of Texas, is a new work based on a unique method with many commendable features. Saving the introduction, the work is entirely in French, a noteworthy characteristic. The author has for years taught by the method he exemplifies and his success has been so marked as to call for the publication of the plan. The book is a complete grammar of the French language and is suitable for use as well by beginners as by advanced students. New York: The Macmillan Company. Received from W. B. Clarke, Boston.

Prof. Miner H. Paddock, of Providence, R. I., is an enthusiastic student of mineralogy, and being fertile in resources, inventive by nature and scholarly by training, he has given many aids and appliances to the teacher and student. He believes in the pedagogical value of a systematic scientific study of mineralogy in all grades of schools and one of the fruits of his faith is A PUPILS' MANUAL, No. I. In this manual are given some thirty pages of the methods and principles of the science of mineralogy, followed by seventy pages of outline blanks to be filled by pupils while studying their mineral, rock, or metal named in the manual. It is a most helpful and stimulating manual, replete with information and suggestion. It deserves extensive use in the schools. Published by the author.

ELEMENTS OF CONSTRUCTIVE GEOMETRY, by William Noetling, contains sixty-two pages devoted to the subject of geometry. It is largely a translation of a work prepared by the eminent German mathematician, K. H. Stoecker. The subject is presented inductively, the plan is constructive, the pupils drawing their own figures. The work is intended for children from ten, or even nine years of age and upward. The definitions are exact, the explanations are clear and explicit, the development of the subject natural and progressive. There is a place all ready for just such a book in elementary schools, and it will surely find a welcome from many teachers. Boston: Silver, Burdett & Co.

OUTLINES FOR KINDERGARTEN AND PRIMARY CLASSES, in the Study of Nature and Related Subjects, is by E. Maud Campbell and Margaret E. Wise, of the Ypsilanti (Mich.) State Normal School. The outlines are arranged first by months and then by weeks, the topic for each week being given with full outline for its presentation: the songs, games and stories that accompany it; the gifts; the modeling, cutting, pasting, etc. The correlation of the kindergarten and the primary work with the study of nature is most interestingly done and will produce beautiful and permanent results. It is just the book for primary teachers of the lowest grade. New York: E. L. Kellogg & Co

PERIODICALS.

American educators who read the German — and the number is now large — should know about the excellent international review edited by Doctor Wychgram at Leipzig — *Deutsche Zeitschrift für Ausländisches Unterrichtswesen.* It enters upon its third year with the October number and the scope of its original articles from the first has been varied and interesting. To bring to students of education a review of the great movements in the different countries of the world is no easy task; and yet Doctor Wychgram has succeeded in this effort in a manner that is highly satisfactory. The October number, which may be taken as typical, opens with an account of the University of Colorado by Prof. James E. Russell; follows with a sketch of educational activities in Norway during the present century, by P. Voss; gives brief accounts of educational movements in Scotland and the Transvaal — the former by Gustav Hein and the latter by Dr. L. Wirth; discusses the higher educational institutions for women in England (this by Miss Amy Bramwell) and describes the elementary schools of Washington. Besides these original articles there are numerous items of educational intelligence from America, Europe, Asia and Africa and a goodly number of book reviews.—— Two leading articles in *Harper's Magazine* for December are The Queen's Jubilee, by Richard Harding Davis, and A Bird's Egg, by Ernest Ingersoll. Both articles are beautifully illustrated.——Recent numbers of the *Weekly* and the *Bazar* contain interesting illustrations of life in the Klondike.—— Henry Van Dyke contributes a story to the December *Scribner's Magazine*, entitled A Christmas Loss, in which he tells a tale of Antioch fifteen hundred years ago. It is a chaste story, full of religious feeling.—— Dr. S. Weir Mitchell, author of Hugh Wynne, Free Quaker, will begin a new novel in the first issue of the *Century Magazine* for the new year, called The Adventures of Francois,— A Tale of the French Revolution.—— Rudyard Kipling's first "Just-So" story appears in the Christmas number of *St. Nicholas.* The illustrations are by Oliver Herford. It is the first of a series of fantastic stories about animals.—— The first edition of *McClure's Magazine*, Christmas number, will be a third of a million copies. The list of contributors guarantees the value and interest of the contents.—— *The Atlantic Monthly* announces a new serial story for 1898, by Gilbert Parker. Every number will contain an article on some large educational subject. One of these, to appear soon, will be by Mrs. Alice Freeman Palmer, on The Ideal Relations of a Community to its Public Schools.—— *The Ladies' Home Journal* abounds in seasonable stories, poems and articles of interest and merit.—— Emily Tolman, in *Lippincott's Magasine*, discusses The Club Movement Among Women in a bright and readable way.——Mr. Garrett P. Serviss, the well known astronomer, considers, in *Appleton's Popular Science Monthly*, the probability of there being planets similar to our earth, containing inhabitants, among the fixed stars.—— The testimony of a number of eminent educational experts is given in the *Kindergarten Magazine*, to show that the state has as much concern with the education of a child between four and six as between six and eight.